

# UNIVERSITY OF MALAYA CAMPUS TRANSPORT GUIDELINES

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## **PREFACE**

As among the top university and owning the best experts in Malaysia, University of Malaya is already embarking towards sustainable campus, especially with the establishment of UMCares centre, Zero Waste Campaign and University of Malaya Eco-Campus Blueprint. As rapid urbanization, industrial development and population growth lead to rapid transportation development and accessibility in developing countries, this development factors are also applicable to a mini-scale community or a mini-city like a university campus that host a big community where all the daily activities and lifestyles are constantly centralized in it. Mobility occur every day within the university campus. To date, University of Malaya, being the foremost and premier Research University (RU) in Malaysia, is a multidisciplinary RU that has more than 28,000 students and more than 5000 staffs with approximately 381 blocks of campus buildings. Accompanying those digits are daily operation, activities and events, thus require constant mobility access to various modes of transport. Therefore, integrated transportation system management within a university campus is vital and necessary to handle the traffic flow and ease of access effectively. This guideline contains the information details about the current transport modes available in University of Malaya and introduction to sustainable transport initiatives under one of the Living Lab Project team that focused on sustainable transportation system in University of Malaya campus.

## 1.0 INTRODUCTION

The different modes of transport are air, water, and land transport, which includes rail, road and off-road transport. Each mode has its own infrastructure, vehicles, and operations. Generally, vehicles are classified into cars/taxis, motorcycles, light goods vehicles or trucks, buses and bicycles. Higher population means higher mobility and higher transportation usage. Educational institutions such as a university is one of the community with high population since it is a centralized place where all type of activities occur daily. A university consist of facilities for residential, learning, working, event, dining, sports, administration, teaching, research and development and many others to specify. Mobility from one place to another require transportation access. Therefore, universities in Malaysia also faces challenge in managing its transportation management.

Major challenges in transportation management are traffic congestion, unlimited car accessibility within campus, limited parking spaces and lower rates of cycling culture among the campus community. In terms of sustainability context, sustainable transportation does not only focus on a specific type of vehicle, but it requires an integrated transportation system. Sustainability will be achieved by integrating all means of transport modes. Nowadays, higher academic institutions, globally and locally, have been taking initiatives to improve their transportation management to support the sustainable agenda. Educational institutional especially university has a large community that can become a part of the workforce to initiate and take part in realizing Malaysia's target to reduce 45 per cent of carbon dioxide (CO<sub>2</sub>) emission by 2030 to address climate change and global warming.

## 1.1 Objective

The University of Malaya Campus Transport Guidelines serves as the outline and a sustainable agenda for University of Malaya campus community. Accordingly, the objectives of this campus transport guidelines are:

- 1) To provide information on availability of integrated sustainable transportation system within the campus.
- 2) To inform and promote community to choose shuttle bus and non-motorized transport mode as their main travel mode in campus and reduce transportation carbon footprint.

## 1.2 Scope

This guideline covers all information related to transportation services provision available in UM campus and details about the content of Living Lab Project that focused on sustainable transportation system in University of Malaya campus.

## 2.0 TRANSPORTATION SERVICE PROVISION

The current transportation services provision available in UM campus including bus service (campus bus and external bus), bicycling facility, electric vehicles project, car and pedestrian accessibility.

### 2.1 Bus Service

#### 2.1.1 Campus Bus (UMRIDE CAMPUS)

1. The Student Affairs Division manages 21 buses (including three coasters) and 25 drivers provide shuttle services for students traveling in and outside campus. All these buses are used for students to attend classes.
2. UM shuttle bus schedules are always circulated via *siswamail* every semester by Student Affairs & Alumni Division. Any changes and updates of the bus timetable, HEP department will circulate the changes via *siswamail*. Therefore, students are advised to regularly check their *siswamail*.
3. Students are advised to wait for the shuttle bus at designated bus stop points which can be found from the UM shuttle bus service route diagram. (As shown in Figure 1)

### 2.1.1.1 Service route

1. The routes are limited to shuttle within campus, from Pantai Dalam/Kerinchi, Section 17 (International House) and from 9th Residential College.
2. Bus punctuality at every station is subject to number of bus available, number of bus drivers available and the weather conditions such as heavy rain and also subject to the traffic flow on the road.

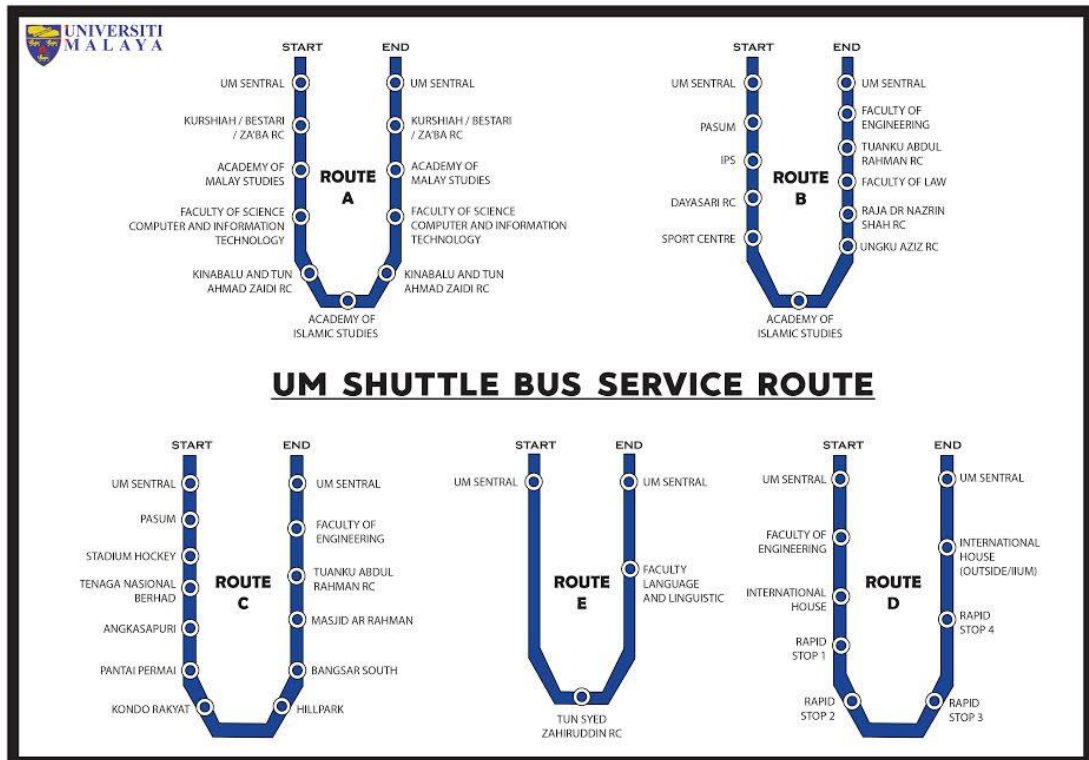


Figure 1: UM Shuttle Bus Route

## 2.1.1.2 Campus bus schedule

- Students are advised to wait at the designated bus stops earlier about 5~10 minutes before the scheduled time.

TRANSPORTATION MATTERS, STUDENT AFFAIRS & ALUMNI DIVISION, UNIVERSITI OF MALAYA

### SHUTTLE BUS OPERATION SCHEDULE (ROUTE A, B & E / IN-CAMPUS)

[MONDAY – FRIDAY]


TRIP	OPERATION TIME	
	FROM UMS	FROM API
1	7.30am	*7.40am
2	7.45am	*7.55am
3	8.00am	*8.10am
4	8.15am	*8.25am
5	8.30am	*8.40am
6	8.45am	*8.55am
7	9.00am	*9.10am
8	9.15am	*9.25am
9	9.30am	*9.40am
10	9.45am	*9.55am
11	10.00am	*10.10am
12	10.30am	*10.40am
13	11.00am	*11.20am
14	11.30am	*11.40am
15	12.00pm	*12.20pm
16	12.30pm	*12.40pm
17	1.00pm	*1.10pm
18	1.30pm	*1.40pm
19	2.00pm	*2.10pm
20	2.30pm	*2.40pm
21	3.00pm	*3.10pm
22	3.30pm	*3.40pm
23	4.00pm	*4.10pm
24	4.30pm	*4.40pm
25	4.45pm	*4.55pm
26	5.00pm	*5.10pm
27	5.15pm	*5.25pm
28	5.30pm	*5.40pm
29	5.45pm	*5.55pm
30	6.00pm	*6.10pm
31	6.15pm	*6.25pm
32	6.30pm	*6.40pm
33	6.45pm	*6.55pm
34	7.00pm	*7.10pm
35	7.30pm	*7.40pm
36	8.15pm	*8.25pm
37	9.15pm	*9.25pm
38	10.15pm	*10.25pm

**NOTES:**

- Bus does not operate on the following days:
  - Weekend (Saturday & Sunday).
  - Public Holiday.
- Bus will operate 1 hour/bus (8.00am – 8.00pm) on the following weeks:
  - Mid-Sem Break.
  - Study Week.
  - Semester Break.
- Bus does not operate during Friday Prayer. Time break starts from 12.30pm until 2.45pm.
- \*Bus schedule depends on traffic situations.
- This schedule will be effective on 5<sup>th</sup> March 2018 (2<sup>nd</sup> Semester Session 2017/2018).

**ANY INQUIRIES PLEASE CONTACT:**

☎ 03-7967 3548/2630  
 ✉ hep\_pengangkutan@um.edu.my  
 🌐 www.hepa.um.edu.my



**REFERENCE:**  
 UMS UM Central  
 API Academy of Islamic Studies  
 Break for Friday Prayer

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### SHUTTLE BUS OPERATION SCHEDULE (ROUTE D / OFF-CAMPUS)

[MONDAY – FRIDAY]


TRIP	OPERATION TIME	
	FROM UMS	FROM IH
1	7.30am	*7.40am
2	8.00am	*8.10am
3	8.30am	*8.40am
4	9.00am	*9.10am
5	9.30am	*9.40am
6	10.00am	*10.10am
7	10.30am	*10.40am
8	11.30am	*11.40am
9	12.30pm	*12.40pm
10	1.30pm	*1.40pm
11	2.30pm	*2.40pm
12	3.30pm	*3.40pm
13	4.30pm	*4.40pm
14	5.30pm	*5.40pm
15	6.30pm	*6.40pm
16	7.30pm	*7.40pm
17	8.15pm	*8.25pm
18	9.15pm	*9.25pm
19	10.15pm	*10.25pm

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Figure 2: Schedule of Route A,B,E(In Campus) Figure 3: Schedule of Route C(Off Campus)

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### SHUTTLE BUS OPERATION SCHEDULE (ROUTE D / OFF-CAMPUS)

[MONDAY – FRIDAY]


TRIP	OPERATION TIME	
	FROM UMS	FROM IH
1	7.30am	*7.40am
2	8.00am	*8.10am
3	8.30am	*8.40am
4	9.00am	*9.10am
5	9.30am	*9.40am
6	10.00am	*10.10am
7	10.30am	*10.40am
8	11.30am	*11.40am
9	12.30pm	*12.40pm
10	1.30pm	*1.40pm
11	2.30pm	*2.40pm
12	3.30pm	*3.40pm
13	4.30pm	*4.40pm
14	5.30pm	*5.40pm
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 ✉ hep\_pengangkutan@um.edu.my  
 🌐 www.hepa.um.edu.my



**REFERENCE:**  
 UMS UM Central  
 IH International House  
 Break for Friday Prayer

Figure 4: Schedule of Route D (Off-Campus)

### 2.1.2 External Bus (RapidKL and MRT bus)

In addition to UM shuttle bus service, there are also external bus route via UM campus, which are RapidKL bus and MRT feeder bus. For more information, please visit their website, <https://www.myrapid.com.my> .



Figure 5: RapidKL bus



Figure 6: MRT feeder bus



## 2.2 Bicycling Facility

### 2.2.1 Shared Lane Road Markings

In February 2018, installation of shared lane road markings (sharrow) as a guide for cycling route along part of *Lingkungan Budi* route in UM campus has been implemented as initiative to increase and encourage cycling activity among campus community.



Figure 7: Shared lane road markings

Shared lane road markings safety rules:

1. Obey all traffic laws, stopping at all applicable traffic signs and lights.
2. Follow the shared lane road markings (sharrows) along the left lane of the road.  
Where there is no sign of sharrows, ride along the side of the road on the left lane.
3. Please be courteous to other vehicles sharing the road with you.
4. Use caution on descending hills. Be sure to brake lightly and hold onto your handle bars.

## Safety advice on road

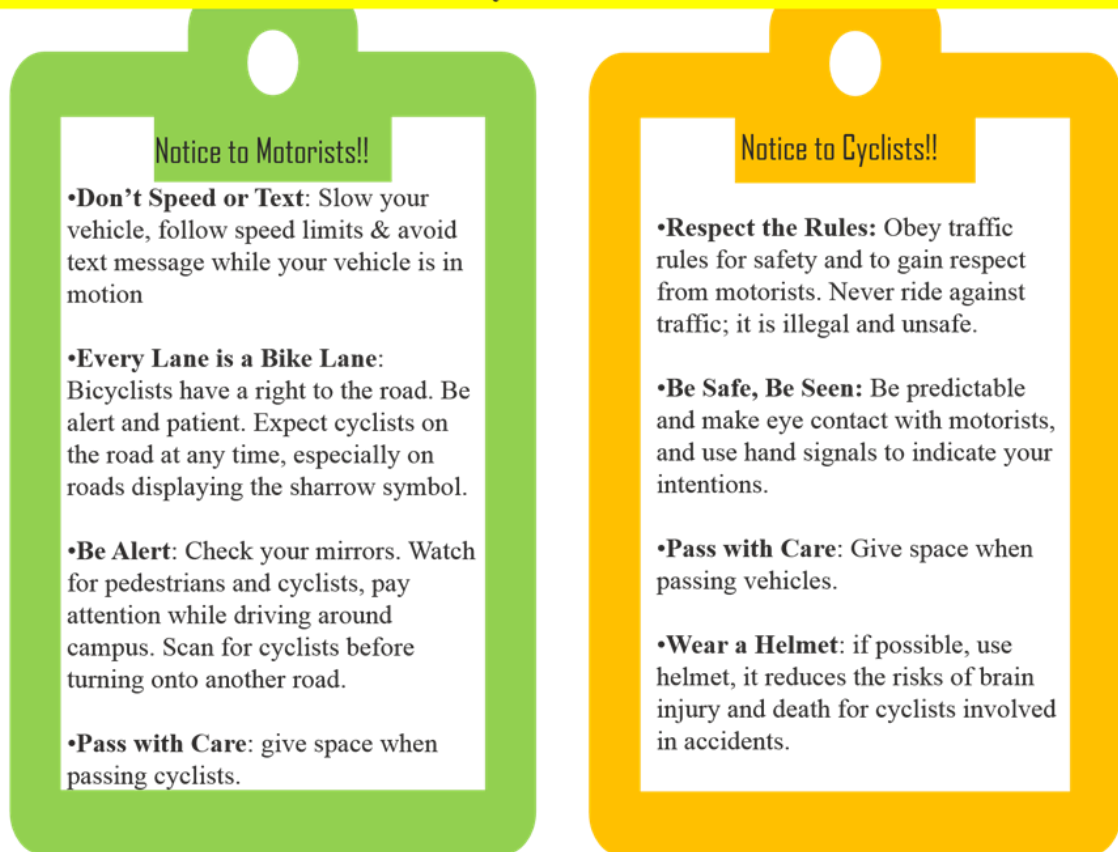


Figure 8: Safety rules on UM campus road to both cyclists and motorists



Figure 9: Students are advised to cycle on the left side of the lane



Figure 10: Students are advised to follow the cycling route indicated by sharrow markings

**LIVING LAB PROJECT (LL024-16SUS):**  
**SUSTAINABLE TRANSPORT SYSTEM IN UNIVERSITY OF MALAYA CAMPUS:**  
**STUDY ON IMPROVE THE FEEDER BUS SERVICE AND PROMOTE NON-**  
**MOTORIZED TRANSPORT MODE IN CAMPUS**

**Sustainable Transport System: Introduction to “SHARROWS”**  
**(Shared Lane Road Markings)**

- ❖ It is a short term used for Shared Lane Road Markings.
- ❖ Shared lane means the road can be shared with all road users, motorized and non-motorized vehicles. This means bikers or cyclists can freely and safely used the road together with other vehicle users.
- ❖ The term is derived from words play , a combinations of: SHARED LANE + ARROWS = SHARROWS

**What does Sharrows marking looks like?**



It includes a bicycle symbol and two white arrows

There are other different markings where the arrow directions are pointed to specific cycling routes. (the arrow direction show the cyclist which way to go)

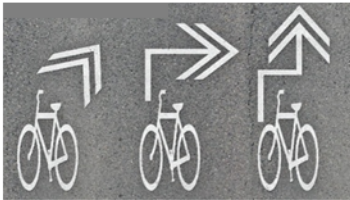


Figure 11: Sharrow information brochure



**Sharrow marking is a REMINDER FOR MOTORIST to share the road with cyclist!!**



ONLY pass a cyclist when there is a safely, adequate space

Give the cyclist a space to maneuver to avoid hazard

Cyclist has a legal right to stay on the center of the lane

WATCH OUT for cyclist during changing the lane or turns

REDUCE the speed when:

- ❑ Passing side-by-side with a cyclist
- ❑ Sharing a narrow lane
- ❑ Do WAIT for cyclist to turn off the roadway, or until the cyclist can move into nearer parking lane

DO share the road even in the absence of sharrow or bike lane markings

- ✓ To show motorists that the road can be shared with cyclist or bikers
- ✓ To alert all road users to be aware of the sight of a bicycle on road
- ✓ To support in highlighting the cyclist route networks
- ✓ To ensure the cyclist can cycle on the road comfortably and safely
- ✓ To offer directional and way finding guidance for cyclists.
- ✓ To show both motorists and bicyclists the minimum distance that cyclists should ride from parked cars to avoid being hit by a suddenly opened car door.
- ✓ It is used through intersections and some merge zones to support straight-line cycling.

**What is the PURPOSE of Sharrows marking?**

sharrows VS bike lane markings		
Type of markings	Sharrows	Bike lane
Shared lane	✔	✘
Dedicated lane for cyclist only	✘	✔
Pavement marking	✔	✔
Cycling route markings	✔	✔
Mixed with motor vehicle traffic	✔	✘
Motorist can drive over the markings on lane	✔	✘
Symbol		

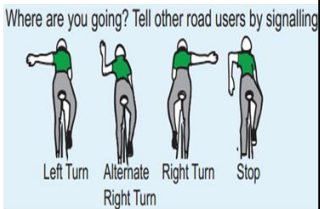
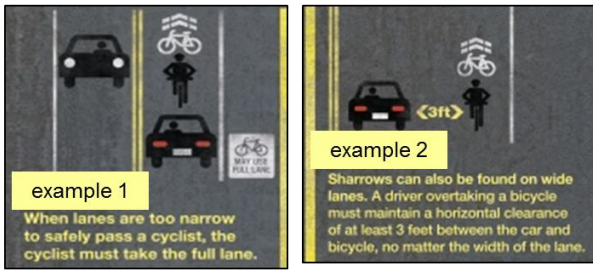
Figure 12: More sharrow information

**Sharrows Safety Rules for cyclist:**

•Ride about 1 metre from the curb to avoid hazards such as debris and sewer grates.



•When in narrow lane, ride in the centre of the lane to avoid motorists from passing too closely. Cyclists and motorists should not travel side-by-side in a narrow lane.



•Ride about 1 metre (or in the centre of the lane) from parked cars on-street parking to avoid the "door zone".

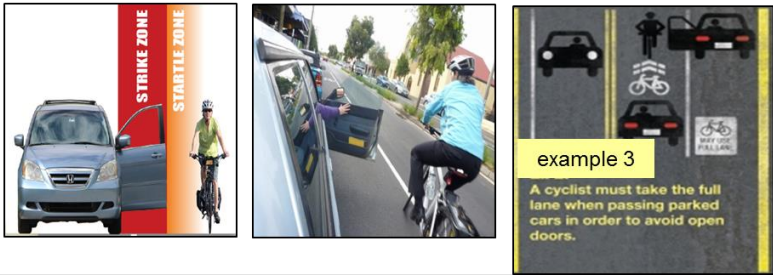


Figure 13: Sharrow safety rules for cyclist




Figure 14: Sharrow infographic as a part of an education campaign in other country [8]



## SHARED LANE MARKING FAQ

### City of Akron Bicycle Plan



**What is the purpose of this marking?**  
This new "Shared Lane Marking" (a.k.a. "Sharrow") is intended to inform cyclists and motorists that they both are to share the travel lane. It has been shown to be helpful in creating safer conditions for both cyclists and motorists.

1. It reinforces that both cyclists and motorists follow the rules of the road.
2. On narrow lanes, it keeps the cyclist from driving too close to the curb (where they are not as visible) and helps the motorist from passing too close.
3. Where there is on-street parking, it keeps the cyclist out of the "door zone" of parked cars.
4. It reduces wrong way riding by cyclists.

**If I see this marking in a lane, is the lane only for bikes?**  
No. This marking is used for shared lanes; lanes that are used by bicyclists and motorists. Shared lanes are different than exclusive bike lanes which are set aside for bicyclists only and are marked by a solid white line with a bike and arrow symbol.

**As a cyclist, if I don't see this marking, can I still use the travel lane?**  
Yes. All lanes are bicycle lanes. Cyclists can ride on any street except for those with signs explicitly prohibiting cyclists, such as the expressway routes.

**As a cyclist, what should I do in the presence of sharrows?**  
The sharrows are placed outside of parked car's "door zone", and on narrow lanes in the center of the lane. We expect cyclists to drive through the center of the sharrow, while still paying attention to potential door openings and surrounding traffic.

**As a motorist, what should I do in the presence of sharrows?**  
Slow down and drive carefully. When the travel lane is too narrow or busy for safe side-by-side travel by motorists and cyclists the rules of the road require motorists to slow down and wait to pass safely, or until cyclist turns off the roadway. The amount of time saved by gunning past a cyclist is often very minimal and is never worth the possibility of injuring someone!

**Almost all streets in Akron are shared by cyclists and motorists and don't have sharrows. Why mark only some streets?**  
Most Akron streets carry low volumes of traffic with relatively slow speeds and special markings aren't needed. We are placing sharrows only on streets where traffic is relatively heavy and speeds are a little higher. We are developing a complete bicycle route network over the next several years which will include shared lanes, exclusive bike lanes, and signage-only routes.

Figure 15: Sharrow information as a part of an education campaign in other country [9]

# BICYCLE SAFETY

For Pennsylvania Riders



## 4-Foot Passing Rule

Bicyclists & Drivers: Please Share the Road!  
It's not just a good idea... it's the law.



Here's what you need to know about the law:

- When passing a bicyclist, drivers must allow at least four feet between their vehicle and the bicycle.
- Drivers can cross the center double yellow line if necessary to provide the required four feet as long as it is safe to do so.
- When traveling below the posted speed limit, cyclists must keep to the right side of the road unless they are making a left turn or riding on a one-way street.
- If there is only one travel lane, bicyclists may use any portion of the lane to avoid hazards on the roadway.
- No turn by a driver can interfere with a bicyclist who is proceeding straight on a roadway. Drivers attempting to turn left must yield the right of way to bicyclists traveling in the opposite direction.
- Drivers can't force a bicyclist off of the road.

## Know the Hand Signals



## Safety Tips

- Check your bike before riding it.
- Always wear a helmet.
- Don't wear loose clothing, as it can get caught in the bike's chain, gears, or brakes.
- Wear reflective gear, especially when riding at night.
- Take less-traveled routes so you won't have to compete with dangerous traffic.
- Ride in a straight line on the right side of the road.
- Ride near the curb, but stay a car door's width away from parked cars.
- Ride in the same direction as traffic flow.
- Obey traffic signs and signals, including stop lights and stop signs.
- Don't assume that drivers can see you.

#1 SAFETY TIP: Be aware of your surroundings. Watch for cars, other bikers, and pedestrians at all times.



Sources:  
National Highway Traffic Safety Administration, Department of Transportation, Centers for Disease Control and Prevention,  
Bicycle Helmet Safety Institute

**Edgar Snyder & ASSOCIATES**  
A Life Line Supporting Injured People

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## 2.2.2 Public Bike Sharing Program (O-BIKE)

In addition, in line with the green SEA games 2017 initiative, the O-BIKE company has placed a lot of the public bike within UM campus to encourage UM citizens to cycle. Adopting the concept of stationless public bike, the public bikes grouping locations can be seen everywhere.



Figure 17: Provision of stationless public bike sharing around the campus



Figure 18: O-Bike instructions

## 2.3 Uniride Electric Vehicles Project

### 2.3.1 Electric Scooter (E-SCOOTER@UM)

UNiRIDE Pilot Project is one of the initiatives for UM green transport under UM Student Affairs & Alumni Division. To all UM community who are interested to use this facility, you may get more information at their counter located at Foyer Auditorium, Perdanasiswa Complex.



Figure 19: Poster UNiRIDE E-Scooter



Figure 20: Steps to use UNiRIDE E-Scooter



Figure 21: Service counter UNiRIDE E-Scooter



Figure 22: UNiRIDE E-Scooter facilities

### 2.3.2 Electric Bike (UNiRIDE E-BIKE)



Figure 23: Electric bike available at UM campus

UNiRIDE e-Bike is the 1<sup>st</sup> electric bicycle (E-Bike) sharing platform in Malaysia, allowing students and university staff to take a short trip within university campus. The first step to getting on your E-bike is to download the UNiRIDE app that is available in Apple and Google playstore. For more details explanation, please visit <https://uniride.com.my/>



Figure 24: Bicycle safety tips [11]

## 2.4 Car

### 2.4.1 Car Sharing Program (UNiRIDE)



Figure 25: Car sharing program

UNiRIDE is on-campus car sharing program where user needs to register as a member. A member is eligible to rent a UNiRIDE car by placing a booking online via website and mobile apps. Cars are parked at various UNiRIDE stations inside campus and it can be rented for hourly or daily basis with an option of one-way trip or round-trip booking. For more details explanation, please visit <https://uniride.com.my/> Then, fill up the online application at [www.uniride.com.my](http://www.uniride.com.my). You can also fill up the form via UNiRIDE mobile apps which is available on Google Play or App Store.

### 2.4.2 GrabVarsity



Figure 26: GrabVarsity launch [12]

E-hailing service provider Grab Malaysia has launched a new programme that caters specifically to students from higher education institutions. Grab launched their latest platform known as GrabVarsity in collaboration with a few Malaysian universities at University Malaya. Under this platform, students can also participate in a short-term student-only Grab driver programme, which includes short-term car rentals that allows students to earn a supplementary income. GrabVarsity information can be accessed by the student community via the portal [GrabVarsity.com](http://GrabVarsity.com).



## 2.5 Pedestrian Accessibility

Walking is the most easier and healthier form of transport. In UM campus, many facilities available for pedestrian and for people with disability. Informative pole is one of the initiatives by Living Lab project to encourage walkability culture in campus, reduce vehicles' carbon footprint and to induce healthy living lifestyle.



Figure 27: Informative sign poles for pedestrian reference



Figure 28: Pedestrian walkways



Figure 29: Walkways for person with disability

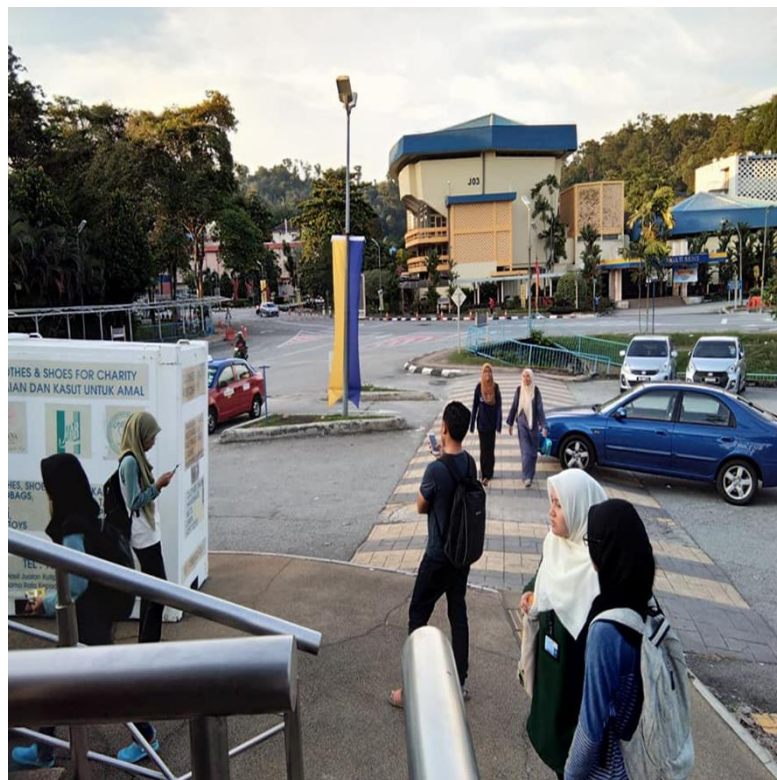


Figure 30: Inter-connected walkways around the campus





Figure 31: Traffic light stops for pedestrian

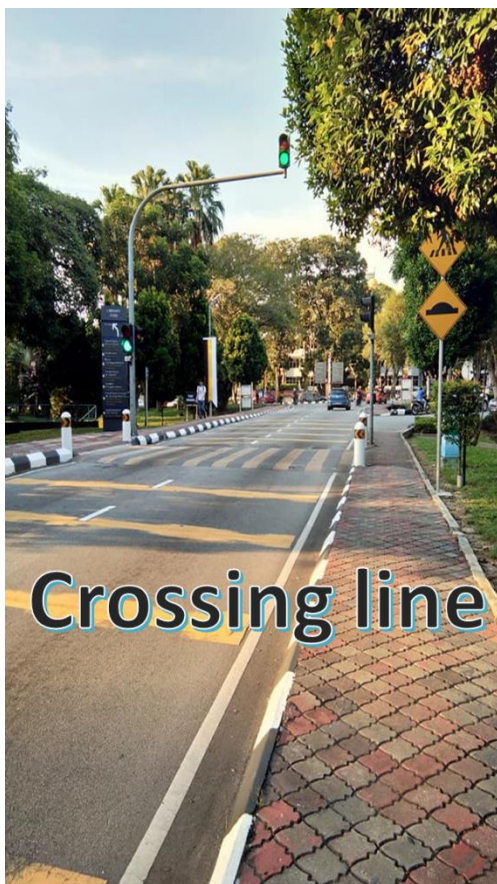


Figure 32: Yellow stripe crossing lines



Figure 33: More walkways around campus

### 3.0 LIVING LAB LL024-16SUS

#### 3.1 LL024-16SUS Project Brief

The aim of Living Lab Project LL024-16SUS is to develop an innovative and integrated sustainable transport system to solve the traffic problem within the campus. The possibility to implement various policies in UM campus, such as “Sharrow/Shared-Lane”, “Park and Ride”, “Park and Cycle/Walk”, “Car Free Zone/Hour” have been planned. The objectives of this living lab are; 1) To develop an innovative sustainable transportation system to reduce the motorized vehicle number within the campus, 2) To propose a new transportation policy to solve the lack of parking space problem in campus and 3) To create awareness and promote community to choose shuttle bus and non-motorized transport mode as their main travel mode in campus and reduce transportation carbon footprint.

From the first stage of the research, the bus demand trends throughout a typical weekday managed to be identified and suggested to the bus operator and UM management to provide a “Demand Based Shuttle Bus Service” schedule. Besides, a “Bus Tracking Apps” and **UM Bus Tracking Apps Handbook for UM Bus Drivers** has been developed and promoted to the university management to make sure the use of this apps is beneficial to both students and university.

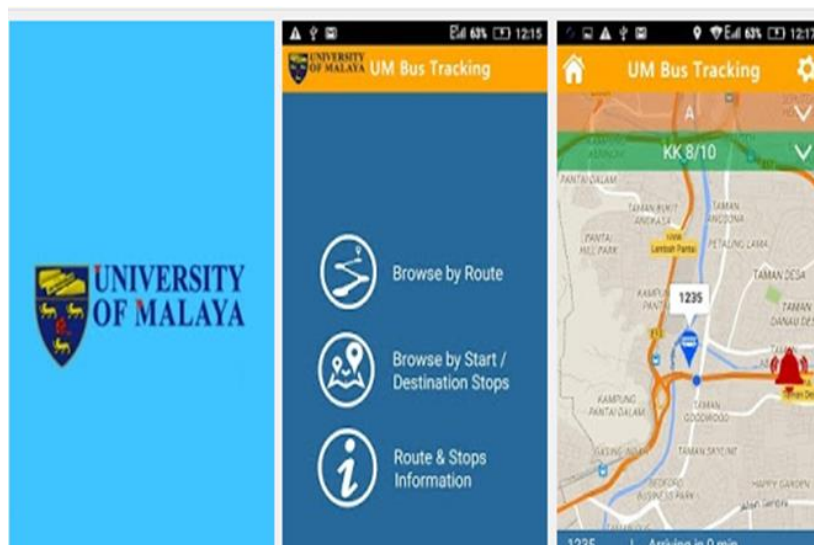


Figure 34: UM shuttle bus tracking apps





Figure 35: UM Bus Tracking Apps Handbook for UM Bus Drivers

Awareness programs were conducted to educate and promote green transport usage in UM campus by organizing roadshows on **Promoting Green Transport in UM Campus and Introduction to Shared Lane Road Markings**. Simplified survey, brochures and detailed questionnaires on cycling awareness in UM campus has been developed and distributed to promote and inform UM community. The events were conducted between November until December 2017.

A series of **bicycle clinics** also conducted to introduce students on cycling skills and maintenance. 3 slots of bicycle clinics were organized at selected residential colleges between November until December 2017.



Figure 36: Examples of necessities used in the promotional activity and research study such as buntings, poster, brochures, and surveys

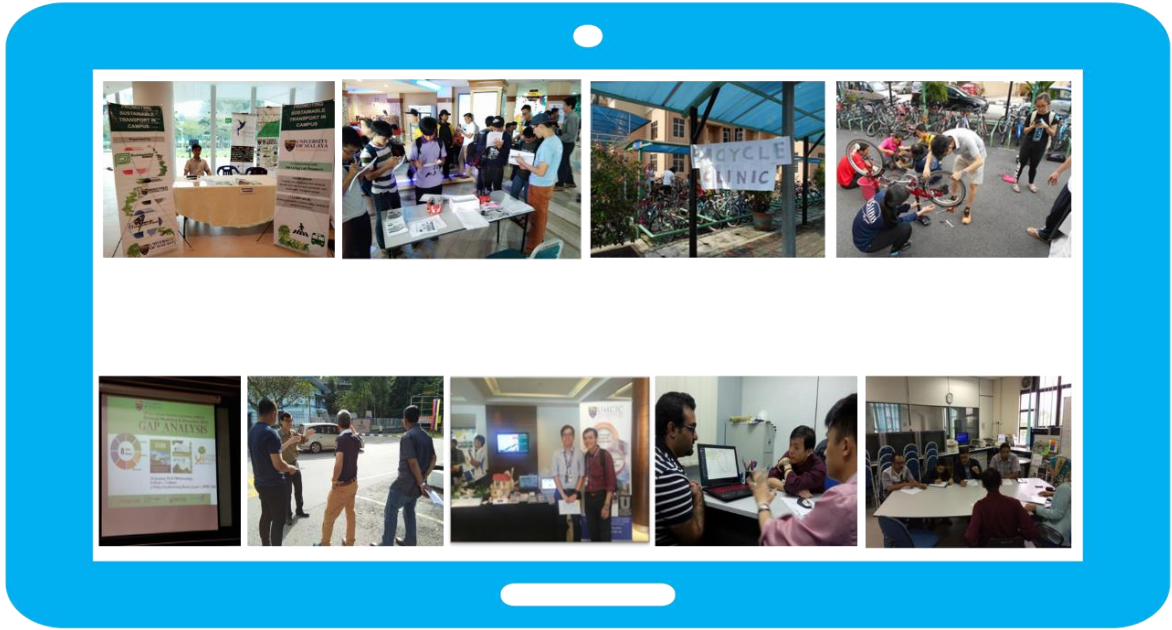


Figure 37: Photos of campus community engagement activities and networking



Figure 38: Communication via roadshows conducted around the campus to increase the level of awareness, informing and promote cycling culture

Through the living lab project initiatives, the university is working gradually to improve the infrastructure, programs, and services available for cyclists on campus. To encourage cycling, **shared lane markings**, or sharrows have been painted on the road around February 2018. **Bicycles ‘IN LANE’ signage pole** also has been installed together to inform and alert vehicle users and cyclists about the shared lane and bicycle routes.



Figure 39: Installation of shared lane road markings (sharrow) in early 2018 along Lingkungan Budi route


<p>What does this symbol wants you to do?</p> <p>This means you must be alert of the sight of the cyclist on the road. Cyclist are allowed to cycle on the center of the road and also on the side of the road.</p>	<p>What does this symbol means?</p>  <p>The road is not yours only, the road is no longer for motorized vehicles only, the roads are meant to be shared with bicycle too.</p>	<p>What you need to do when you see this symbol?</p> <p>Slow your vehicle, Pay attention to cyclist, Reduce your speed, Respect the cyclist, Give a space to cyclist, Always be alert on road</p>
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Figure 40: Shared lane road markings (sharrow) reminder



In April 2018, **UM Living Lab Training Module: UMBIKE Tour** has been developed in order to encourage more cycling activities around the campus. **Online-survey** has been conducted currently on cycling awareness and perception on shared lane road markings among UM campus community in May 2018.

**UM CAMPUS BIKE TOUR**  
 a zero-emissions ride mission

**JOIN US for a fun and casual bike ride!!!**

**Module series 1.0: UMBike Cycling Tour**

Tour 1: UMBike Course 1.0  
 (Coverage distance: 2.1 km)  
 Date : (Weekends)  
 Time : 8.00 am-10.00 am

Tour 2: UMBike Course 2.0  
 (Coverage distance: 6 km)  
 Date : (Weekends)  
 Time : 8.00 am-10.00 am

**Module series 2.0: UMBike Exploration Tour**

Tour 1: UMBike Exploration Course 1.0: The Museum Tour (Coverage distance: 4.1 km)  
 Date : (Weekdays only)  
 Time : 9.00 am-11.00 am

Tour 2: UMBike Exploration Course 2.0: The Rimba Tour (Coverage distance: 5km)  
 Date : (Weekdays only)  
 Time : 9.00 am-11.00 am

Open to: ALL  
 Registration fee: RM 10 per person per tour  
 Facility provision: Bicycle and helmet will be provided by UM  
 Capacity: Limited to 10 person per tour

Location meeting point:  
 Faculty of Engineering,  
 University of Malaya

Explore the urban university campus surroundings,  
 discover fun facts and trivia of the Malaysian oldest university,  
 all while pedaling the bike around the campus!!!

Figure 41: UMBike tour

### 3.2 UM Green Transportation System: The way forward

Based on the report: A Global High Shift Cycling Scenario by the Institute for Transportation & Development Policy and the University of California, the shift toward cycling initiatives can be adopted by UM campus in attempt to move forward in sustainable green transport initiatives.

**Six Ways to Make the Change**

- Build**: network of cycling and e-bike infrastructure
- Implement**: large-scale bike-share programs
- Invest**: in sidewalks, footpaths, and public transport
- Plan**: urban growth to prioritize cycling, walking, and public transport
- Remove**: motor vehicle incentives, such as parking requirements and fuel subsidies
- Adopt**: management policies such as congestion pricing

Figure 83: Shift toward cycling by ITDP and UC [13]

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