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 (CO₂) 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

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

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

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

**Notice to Motorists!!**

- *Don’t Speed or Text*: Slow your vehicle, follow speed limits & avoid text message while your vehicle is in motion.

- *Every Lane is a Bike Lane*: Bicyclists have a right to the road. Be alert and patient. Expect cyclists on the road at any time, especially on roads displaying the sharrow symbol.

- *Be Alert*: Check your mirrors. Watch for pedestrians and cyclists, pay attention while driving around campus. Scan for cyclists before turning onto another road.

- *Pass with Care*: Give space when passing cyclists.

**Notice to Cyclists!!**

- *Respect the Rules*: Obey traffic rules for safety and to gain respect from motorists. Never ride against traffic; it is illegal and unsafe.

- *Be Safe, Be Seen*: Be predictable and make eye contact with motorists, and use hand signals to indicate your intentions.

- *Pass with Care*: Give space when passing vehicles.

- *Wear a Helmet*: If possible, use helmet. It reduces the risks of brain injury and death for cyclists involved in accidents.
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
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
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.

<table>
<thead>
<tr>
<th>Sharrow VS bike lane markings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of markings</td>
</tr>
<tr>
<td>Shared lane</td>
</tr>
<tr>
<td>Dedicated lane for cyclist only</td>
</tr>
<tr>
<td>Pavement marking</td>
</tr>
<tr>
<td>Cycling route markings</td>
</tr>
<tr>
<td>Mixed with motor vehicle traffic</td>
</tr>
<tr>
<td>Motorist can drive over the markings on lane</td>
</tr>
<tr>
<td>Symbol</td>
</tr>
</tbody>
</table>

Figure 12: More sharrow information
Figure 13: Sharrow 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 14: Sharrow infographic as a part of an education campaign in other country [8]
Figure 15: Sharrow information as a part of an education campaign in other country [9]
Figure 16: Bicycling safety information as a part of education campaign in other country [10]
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)

UNiRIDE e-Bike is the 1st 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)

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/](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

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
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.
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

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.

**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.

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

1) https://www.um.edu.my/
2) http://www.hepa.um.edu.my/facilities/transportation
3) https://uniride.com.my/
7) Living Lab Project information
8) http://www.bikeroar.com/tips/how-to-choose-a-safe-cycling-route
9) https://www.uakron.edu/dotAsset/1370431.pdf
13) https://www.itdp.org/the-benefits-of-shifting-to-cycling/
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This guideline was only possible through the efforts of all who are involved and committed to bring the success of sustainable campus goals. The living lab team of University of Malaya who propose and provide the framework of the guideline booklet project. The Vice Chancellor and the Deputy Vice Chancellor who thoroughly support the continuous development towards sustainable urban campus through the establishment of living lab projects. The Centre of Transportation Research who supports the facilities and maintenance. Last but not the least the member of the living lab project LL024-16SUS especially Ir. Dr. Yuen Choon Wah, the principal investigator, who supervise and coordinate the establishment of this guideline. The research assistant Puteri Normiyani Abu Hassan assisted in preparation of the guideline.