



MPhil/PhD Scholarship Opportunity (F/T)

Applications are invited from suitably qualified candidates to work in a research project entitled: **A Sustainable Public Transport System for Mauritius.**

The scope of the research work is as follows:

Mauritius has a very good road network and a complex public transport system with over 250 routes serviced by more than 1800 buses. The public bus transport is very structured and provide easy access to almost any part of Mauritius but still the local population are adopting private means of transport as soon as there is an opportunity to do so. The bus transport system has helped the country during the rapid industrialisation in the 1980's allowing employees to commute easily between places and one company even started a night service along the Port Louis – Curepipe corridor which was later discontinued. The preference for public transport has changed while the public transport has not re invented itself except for some changes in the types of buses used. Even with an extensive bus transport network, many people are still investing in a private car to commute to different places and the main complaint is comfort.

The comfort of passengers in public transport was shown to be composed mainly of postural, mental, and micro environmental components. There are many other factors such as journey purpose, length of route, time of the day and age of passengers that significantly contributed to the feeling of comfort. The use of private cars puts a lot of stress on the economy with an increase in the number of accidents, increase in number of deaths on roads, increase in traffic jams, increase in petrol consumption and parking problems in main cities. The main objective of the public transport is to provide convenience and low cost travel options to passengers but there are many other determinants that influence the choice of passengers. Transport systems can be made more attractive by providing the passengers with more options that will lead to improvements on the trip. These improvements can have a high impact on the passengers' decision making.

One major inconvenience is the air quality inside the vehicles during the journey. The public transport system is a system which is moving and achieving satisfactory performance over the whole journey is even more difficult unless appropriate metrics are available. Accurate modelling of the public transportation system will rely on micro data which may not be available but will have to be collected during the research. The data collected will further help to refine the research.

The selected MPhil/PhD student will have to look into the factors that affect comfort and the quality of journey and propose measures to make the public transport system sustainable and acceptable to the population. The candidate will also research into innovative ways to enhance the trip based on the local specificities.

Qualifications Required:

- A first degree in Mechatronics Engineering/ Mechanical Engineering/ Industrial Engineering/ Manufacturing Engineering/ Transport Engineering or any related **engineering** degree to the field of the research project at minimum second class second division or 50%, whichever is applicable, or a GPA of at least 2.5 out of 4 or equivalent.

Desired Background

- Candidates with undergraduate engineering degree and project/research experience in Transport or engineering field.
- Experience in sensor integration, instrumentation and data logging would be an advantage

Profile

Candidates must be perseverant, motivated, creative, hard-working, skilful, proactive and be able to work independently. Candidates should have:

- Good research, analytical and communication skills.
- Knowledge of basic statistics and statistical analysis of experimental data.
- Knowledge of appropriate software for modelling and simulation.
- Good interpersonal skills and ability to work in a team.
- Willingness to acquire further knowledge/skills in current areas of competencies as well as to learn new concepts outside current areas of competencies.

Responsibilities & Duties

- Carry out literature review in the related field of research.
- Devise a detailed research proposal under the guidance of the supervisors for submission to the Doctoral School at the University of Mauritius so that the student can be registered as an MPhil/PhD student, and upon successful registration, carry out research in the relevant fields according to the agreed schedule.
- Work on journal publications over the course of the project
- Produce the MPhil/PhD transfer report towards the middle of the second year.
- If transferred to PhD, pursue the research project to produce the final PhD dissertation and journal publications as guided by the supervisors.
- Attend conferences and workshops as deemed appropriate by the supervisors.
- Perform field works, system selection for data collection, data collection and analysis.
- Perform statistical analysis of the results obtained.
- Perform system modelling, simulation and analysis under static and dynamic conditions.
- Work with Project Assistants to meet set objectives
- To perform experimental work and conduct different tests as per requirements.
- To regularly meet the Supervisors, project assistants and report to the Principal Investigator.
- Assist in report writing and presentation of results obtained.

Terms and Conditions

The terms and conditions for the MPhil/PhD scholarships will be according to those stipulated by the Tertiary Education Commission (TEC), which can be consulted at the following link: http://www.tec.mu/mphil_phd. The starting date for the payment of monthly stipend/allowance will be as from the date of registration as an MPhil/PhD student with the Doctoral School. Applicable rules and regulations for MPhil/PhD registration and for MPhil/PhD study at the University of Mauritius can be consulted at the following link: <http://www.uom.ac.mu/index.php/study-at-uom/regulations/mphil-phd>

Mode of Application

Letter of application together with a detailed *Curriculum Vitae* and photocopies of qualifications, detailed transcripts, birth certificate, marriage certificate (if applicable), testimonials and equivalence of qualifications (where applicable) should reach **the Dean of the Faculty of Engineering (Attention: Dr. Santaram Venkannah, Principal Investigator), University of Mauritius, 80837 Réduit, Mauritius** OR email address (sv@uom.ac.mu) and copied to (deanfeng@uom.ac.mu) by **Thursday 13th June 2019, at latest**. In addition, applicants should request two referees, acquainted with their academic and/or professional experience to send two (2) reference letters either by email (sv@uom.ac.mu copied to deanfeng@uom.ac.mu) or by post in sealed envelopes (stamped and sent by the referee), to the **Dean of the Faculty of Engineering**.

Applicants are required to submit an analytical review of the literature on **Sustainable Public Transport System** by providing a write-up not exceeding 600 words.

Any postal correspondence should be clearly marked “**MPhil/PhD – Sustainable Public Transport System**” on the top right hand corner.

Applications received after the closing date will not be considered.

The University reserves the right:

- to call for interview only the most appropriately and best qualified applicants. Video calls may be arranged for international students.
- not to make any appointment as a result of this advertisement.

Date: 13th May 2019

Dean, Faculty of Engineering