Faculty of Engineering
Department of Civil Engineering
www.eng.upm.edu.my

Master Of Highway And Transportation Engineering
INTRODUCTION

This programme is designed to train professionals to be knowledgeable and skilled in forming policies, planning engineering works and ensuring equity to the public at large. It is introduced to produce professionals in the field of transportation who are knowledgeable in the technical and policy issues in transportation, planning, design and control and management. This programme offers advanced knowledge in the topics of traffic, pavement and road safety engineering through the combination of lectures and hands on workshop.

PROGRAMME REQUIREMENTS

Credit Requirements for Graduation

Students enrolling under this programme must fulfill 40 credits of course work to graduate. The credit distributions for compulsory courses, elective courses and project are as follows:

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Compulsory Courses</td>
<td>19 credits</td>
</tr>
<tr>
<td>Elective Course</td>
<td>15 credits</td>
</tr>
<tr>
<td>Project</td>
<td>6 credits</td>
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Compulsory Courses

Students must take all the listed compulsory courses:

- ECV 5601 Accident Analysis And Prevention 3
- ECV 5603 Advanced Transportation Engineering 3
- ECV 5604 Highway Capacity Analysis 3
- ECV 5605 Pavement Materials 3
- ECV 5606 Pavement Analysis And Design 3
- ECV 5607 Pavement Management System 3
- ECV 5977 Independent Study 1

Elective Courses

Students must take five elective courses out of the listed courses:

- ECV 5602 Statistical Method For Transportation 3
- ECV 5608 Public Transportation Analysis 3
- ECV 5609 Highway Design 3
- ECV 5702 Project Management 3
- ECV 5703 Construction Business Management 3
- ECV 5955 Special Topic 3

Identification on the elective courses for the student will be made by the program coordinator.

Project

This course involves a research or study that will be carried out by students on specific topics. It is carried out over a period of two semesters, and covers literature review, data collection and analysis. The scope of research or study will be determined by the supervisor after discussion with the student. At the end of the first semester, the student is required to submit a preliminary report, and at the end of the second semester, the student is required to submit the final report. The student is also required to present the findings to a panel of examiners.
Course Synopsis

- **ECV5601**  Accident Analysis And Prevention  3 credits
  This course covers the diagnosis and measures to overcome accident black-spots problems and the implementation of road safety audit.

- **ECV5603**  Advanced Transportation Engineering  3 credits
  This course covers the concepts and technique of traffic management, traffic restraint, traffic calming, relations to the environment, parking and public transport issue.

- **ECV5604**  Highway Capacity Analysis  3 credits
  This course covers the use of traffic engineering studies as well as capacity analysis of freeway system, weaving segment, ramps, multi-lane and two-lane rural highways.

- **ECV5605**  Pavement Materials  3 credits
  This course covers suitable pavement materials for road construction, asphalt cement rheology, uses, testing of asphalt mixtures, Portland cement concrete mixture, analysis of base, sub-base and subgrade materials.

- **ECV5606**  Pavement Analysis And Design  3 credits
  This course covers theory of layered pavement, interaction between pavement layers, vehicle-pavement, concepts, advanced principles of pavement design, moisture induced damage on pavement, pavement management, rehabilitation, introduction to non-highway pavements and use of design softwares.

- **ECV5607**  Pavement Management System  3 credits
  This course covers pavement performance, pavement evaluation techniques, management of flexible and rigid pavements, exposure to the use of pavement management system software.

- **ECV5977**  Independent Study  1 credit
  The student is required to carry out an independent study on a selected topic that is relevant to his/her field of study and prepare a report at the end of the semester, he/she will be supervised by one or more lecturers.

- **ECV5602**  Statistical Method For Transportation  3 credits
  This course covers scientific methods for collecting, organizing, summarizing, presenting, drawing conclusions and recommendation based on data analysis.

- **ECV5608**  Public Transportation Analysis  3 credits
  This course covers policy, regulation, management and operation of public transport to fulfil user demand. Cost-benefit analysis is also emphasized.

- **ECV5609**  Highway Design  3 credits
  This course covers road classification, traffic characteristic, survey and plan, road geometric design using software, intersection, interchange and terminal parking facility.

- **ECV5702**  Project Management  3 credits
  This course covers the characteristics of project management, system thinking and project life cycle. Construction planning and scheduling as well as contract dispute are also discussed.

- **ECV5703**  Construction Business Management  3 credits
  This course covers business aspects in construction, financial transaction, management of cost and profit control as well as financing sources and cash flow management.

- **ECV5955**  Special Topic  3 credits
  This course covers the management principles, planning and management of highway and transport in line with current issue.

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For more information

Please contact:

Deputy Dean (Research)
Faculty of Engineering
Universiti Putra Malaysia
43400 UPM, Serdang
Selangor Darul Ehsan
Malaysia
Tel: 603-89466266/6253
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Programme Coordinator:

Ratnasamy Munirandy (Prof. Dr.)
Department of Civil Engineering
Faculty of Engineering
Universiti Putra Malaysia
43400 UPM, Serdang
Selangor Darul Ehsan
Malaysia
Tel: 603-89466373
Fax: 603-86567129
Email: ratnas@eng.upm.edu.my
Website: http://www.eng.upm.edu.my
ADMISSION REQUIREMENTS

An applicant with a bachelor degree in engineering with CGPA 2.500/55% Second Class Lower and at least three (3) years working experience experiences in relevant field; or
An applicant with a bachelor degree in engineering with CGPA 2.750/60% Second Class Lower
An applicant with a bachelor degree in science with CGPA 3.000/65% Second Class Upper OR CGPA 2.750/60% Second Class Lower and at least three (3) years working experience experiences in relevant field

* Please refer to programme coordinator for more information on admission requirements

FEES

<table>
<thead>
<tr>
<th></th>
<th>Malaysian Student</th>
<th>International Student</th>
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</thead>
<tbody>
<tr>
<td>Basic Fees (1st semester)</td>
<td>1,200.00</td>
<td>2,200.00</td>
</tr>
<tr>
<td>Basic Fees (2nd and subsequent semester)</td>
<td>950.00</td>
<td>1,950.00</td>
</tr>
<tr>
<td>Credit Fees</td>
<td>250.00 / credit hour</td>
<td>350.00 / credit hour</td>
</tr>
</tbody>
</table>

Language Requirement

- A Malaysian candidate must have obtained at least a credit in English at Sijil Pelajaran Malaysia level or have passed English courses conducted at the Diploma or Bachelor's Level.

- All international candidates from countries where English is not a medium of instruction must have obtained a minimum score of 550 for TOEFL or Band 6 for IELTS. This requirement is not applicable to candidates applying for admission into the Malay Language Studies.

- A candidate without the requisite minimum score for TOEFL or IELTS may be granted a provisional admission. Such candidate will be required to pass an English Placement Test conducted by the University.

- A candidate who has failed the English Placement Test will be required in the first semester to pass a prescribed English course. Should the candidate fail to obtain the prescribed minimum grade, the University may allow him to repeat the prescribed English course in the second semester.

- A candidate who fails after the second attempt will have his candidature suspended until he passes the English course before being allowed to continue with his Masters programme.

Application For Admission

Please apply online via http://www.sgs.upm.edu.my and send your application supporting documents to the address below:

Dean
School of Graduate Studies
Universiti Putra Malaysia
Zon 4, Off Jalan Stadium
43400 UPM Serdang
Selangor Darul Ehsan
Malaysia

Tel. : (063) 8946 4218/4223/4228
Fax. : (063) 8943 2509/8946 4232
Email : admission@putra.upm.edu.my
Website : http://www.sgs.upm.edu.my