

Subject Description Form

Subject Code	CSE40490
Subject Title	Transport Management & Highway Maintenance
Credit Value	3
Level	4
Pre-requisite / Co-requisite/ Exclusion	Nil
Objectives	The objective of the subject is to provide an overall understanding of the transport management concerning the movement of people and goods, the structure and management of transport organisation, road traffic, highway maintenance and management system of road pavement.
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> Able to understand the transport system and the operation of various transport organisations; Able to identify the functions of various traffic management techniques and their applications; Able to understand the formulation and application of pavement management system; Able to identify major pavement defects and understand various pavement maintenance techniques.
Subject Synopsis/ Indicative Syllabus	<ol style="list-style-type: none"> <i>The Transport System</i> (2 weeks) The function and provision of transport; the elements of transport system; characteristics and choice of transport modes. <i>The Structure and Management of Transport Organization:</i> (2 weeks) Privatization; Institutional and market environment, competition and regulation; The pattern of ownership; organization structures; management functions, challenges and strategic planning in transportation. <i>Road Traffic Management:</i> (2 weeks) Highway classification; parking control, statutory guidelines; junction control, signal coordination and area traffic control system; corridor control; traffic surveillance <i>Pavement Management System:</i> (3 weeks) Maintenance Assessment Rating and Costing for Highway (MARCH); pavement maintenance and rehabilitation strategy; pavement performance prediction; economic analysis and network optimization.

	<p>5. Highway Maintenance: (3 weeks)</p> <p>Basic road maintenance operations; wet skid resistance; design and use of pavement surface treatments; structural maintenance of road pavements; use of deflection measurements; overlay design methods for flexible and concrete pavements.</p>																																		
Teaching/Learning Methodology	<p>The underlying principles and techniques relating to transport management and highway maintenance will be dealt with in lectures. However, it is important that the students be exposed to the interdependence between theories and practice. Students will therefore be required to undertake data collection and visualize road maintenance work on sites so as to understand the associated techniques in practice. Individual assignments will consist of the formulation of traffic management scheme and the establishment of road maintenance proposal. Occasionally, professionals from government or industry will be invited to give lectures on currently conducted transport management schemes and road maintenance projects in Hong Kong.</p>																																		
Assessment Methods in Alignment with Intended Learning Outcomes	<table><tr><th rowspan="2">Specific assessment methods/tasks</th><th rowspan="2">% weighting</th><th colspan="4">Intended subject learning outcomes to be assessed</th></tr><tr><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>1. Assignments/site visit reports</td><td>10%</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>2. Two Tests</td><td>20%</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>3.Final Examination</td><td>70%</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Total</td><td>100%</td><td colspan="4"></td></tr></table> <p>Students must pass the final examination and achieve a passing overall score / grade to pass the subject.</p> <p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>The students will be assessed with three components, i.e., the assignments/reports, two tests and a final examination at the end of the semester. The students will be required to attend site visits and submit site visit reports. These site visits will enable students to visualize real pavement maintenance projects and to have an insight into the latest development of pavement engineering/maintenance technology in Hong Kong. Writing up site reports will enhance students' ability on reporting and writing technique. The two tests</p>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed				a	b	c	d	1. Assignments/site visit reports	10%	✓	✓	✓	✓	2. Two Tests	20%	✓	✓	✓	✓	3.Final Examination	70%	✓	✓	✓	✓	Total	100%				
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3.Final Examination	70%	✓	✓	✓	✓																														
Total	100%																																		

	will emphasize on assessing students' basic concept and current practices of transport management & highway maintenance. It is appropriate to achieve intended learning outcomes of (a), (b), (c) and (d). The final examination will consolidate students' learning in lectures and tutorials. It is most appropriate to achieve the intended learning outcomes (a), (b), (c) and (d).	
Student Study Effort Expected	Class contact:	Average hours per week
	▪ Lecture/Tutorials/Site Visits	3 Hrs.
	Other student study effort:	
	▪ Reading and Studying	4 Hrs.
	▪ Completing of Assignments/Reports	2 Hrs.
	Total student study effort	9 Hrs.
Reading List and References	<u>Essential Textbooks</u> <ol style="list-style-type: none"> Gubbins, E.J., <i>Managing Transport Operations</i>, Kogan Page (2009). Hibbs, J., <i>Bus and Coach Management</i>, Chapman & Hall (1996). Macpherson, G., <i>Highway & Transportation Engineering & Planning</i>, Longman (1993). White, P.R., <i>Public Transport: Its Planning, Management and Operation</i>, 6th Ed., Hutchinson (2017). Taylor, M.A.P, Young, W. and Bonsall, P.W., "<i>Understanding Traffic Systems: Data, Presentation and Analysis</i>", Avebury Technical Books: Aldershot (2017). Croney, P. and Croney, D., "<i>The Design and Performance of Road Pavements</i>", McGraw-Hill (1998). Shahin, M.Y., "<i>Pavement Management for Airports, Roads, and Parking Lots</i>", Springer Science+Business Media, Inc. (2005). <u>Reference Textbooks</u> <ol style="list-style-type: none"> Benson, D. and Whitehead, G., <i>Transport and Distribution</i>, Longman (1985). Gilmour, P. <i>Total Quality Management</i>, Longman (1995). Keys, P. and Jackson, M.C., <i>Managing Transport Systems</i>, Gower (1985). Research & Development Division, <i>Guide notes for ROAD INSPECTION MANUAL (RIM)</i>, Highways Department (2016).Stubbs, P.C., <i>Transport Economics</i>, Allen & Unwin (2018). Trvelove, P., <i>Decision Making in Transport Planning</i>, Longman (1992). C.S. Papacosta and P.D. Prevedouros, "Transportation Engineering and Planning", Pearson Prentice Hall (2005). Thom, N., "Principles of Pavement Engineering", Thomas Telford (2014). 	

	<p>8. Papagiannakis, A.T. and Masad E.A., “Pavement Design and Materials”, John Wiley (2017).</p> <p><u>Reference Journals</u></p> <ol style="list-style-type: none"> 1. Bus and Coach Management 2. Highways & Transportation (IHT Journal) 3. Management Today (BIM Journal) 4. Transportation Research Record 5. Transport (CIT Journal)
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