

The Hong Kong Polytechnic University

Subject Description Form

Subject Code	LGT6203
Subject Title	Maritime and Air Transportation Economics
Credit Value	3
Level	6
Normal Duration	1-semester
Pre-requisite / Co-requisite/ Exclusion	Basic knowledge in Microeconomics
Role and Purposes	<ul style="list-style-type: none"> • Provide an overview over current research trends in maritime and air transportation markets. • Train advanced theoretical and empirical research methods common in the field of maritime and air transportation economics. • Provide a forum for interactive discussions of research methods and results derived from recent studies in the field
Subject Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> a) Identify promising own research questions in the area maritime and air transportation economics of interest to researchers in the field. b) Develop their own theoretical and/or empirical approach to solve complex research problems. c) Effectively and instructively communicate with their peers.
Subject Synopsis/ Indicative Syllabus	<p>The course is divided into two parts. The first part is motivated by issues relevant in the maritime industry and second part in the air transport industry.</p> <p>The first part covers the topics on economic, environmental and policy analysis in port and shipping (reading list item no. 1-12). Specifically, it includes the market dynamics in liner shipping between freight rate and world fleet (1-4); modeling freight changes in imbalanced markets (9); Strategic pricing and capacity competition in port (5); Strategic capacity competition and market overcapacity in shipping (11); Externality and emission trading scheme (7,10,12); Ship registration (6, 8, 9). For each topic, the fundamental theoretical background will be introduced, and an example of empirical research will be provided.</p> <p>The second part discusses airline and airport topics. Airline topics cover equilibrium supply of service quality, double marginalization, uncertainty and fleet structures as well as strategic investments. The analysis of airline markets largely relies on the development and discussion of theoretical models. The airport part covers the optimality of airport charges structures, the relationship between aeronautical and non-aeronautical airport businesses as well as congestion management problems. Theoretical as well as empirical methods are discussed in the airport part.</p>

Teaching/Learning Methodology	This subject is based on a series of lectures and interactive discussions between the lecturers and the students.																																																													
Assessment Methods in Alignment with Intended Learning Outcomes	<table border="1"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="6">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>Continuous Assessment</td> <td>100%</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Individual assignments</td> <td>50%</td> <td>✓</td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Class presentations</td> <td>40%</td> <td>✓</td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Class participation</td> <td>10%</td> <td></td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Total</td> <td>100 %</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>Individual assignments – Students are required to submit two individual assignments, one in maritime and one in air transport, discussing topics mentioned during the lectures.</p> <p>Individual presentation – Students are required to present their individual assignments to class.</p> <p>Class participation – In order demonstrate their understanding of the issues discussed in the course, all students are required to take an active part during the lectures and presentations.</p>								Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)						a	b	c				Continuous Assessment	100%							Individual assignments	50%	✓	✓					Class presentations	40%	✓		✓				Class participation	10%			✓				Total	100 %						
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Reading List and References	<p>Maritime transportation part:</p> <ol style="list-style-type: none"> <li>1. Jansson, J. O. & Shneerson, D., 1982. The optimal ship size. <i>Journal of transport economics and policy</i>, pp. 217-238. <li>2. Jansson, J. O. & Shneerson, D., 1985. Economies of trade density in liner shipping and optimal pricing. <i>Journal of Transport Economics and Policy</i>, pp. 7-22. <li>3. Luo, M., Fan, L., & Liu, L. (2009). An econometric analysis for container shipping market. <i>Maritime Policy & Management</i>, 36 (6), 507-523 																																																													

4. BEENSTOCK, M. and VERGOTTIS, A., 1989, An econometric model of the world market for dry cargo freight and shipping. *Applied Economics*, 21, 339–356.
 5. Luo, M., Liu, L., & Gao, F. (2012). Post-entry container port capacity Expansion. *Transportation Research B*, 46 (1), 120-138.
 6. Luo, M., Fan, L., & Li, K. X. (2013). Flag choice behavior in the world merchant fleet. *Transportmetrica A: Transport Science*. 9(5):429-450
 7. Luo, M. (2013). “Emission Reduction in International Shipping—the hidden side effects” *Maritime Policy & Management*. 40(7):694-708.
 8. Fan, L., Luo, M. & Yin, J. (2014). “Flag Choice and PSC Inspection—A Simultaneous Model”. *Transport Policy*. 35(2014):350-357.
<http://dx.doi.org/10.1016/j.tranpol.2014.04.008>.
 9. Fan, L. & Luo, M. & Wilson, W. W. (2014). “Pricing Joint Products in Liner Shipping,” *International Journal of Shipping and Transport Logistics*. 6(4):371-386
 10. Wang K., X. Fu, M. Luo, (2015). “Modeling the Impacts of Emission Trading Scheme on International Shipping”. *Transportation Research Part A. Vol. 77, July 2015, 35-49*
 11. Kou Y. & M. Luo. (2015). “Strategic capacity competition and overcapacity in shipping”. *Maritime Policy and Management*,
<http://dx.doi.org/10.1080/03088839.2015.1105395>
 12. Löfgren, K.G. Markets and externalities. Page 17-46. In “Principles of Environmental and Resource Economics—A guide for students and decision-makers” by Folmer, H., Gabel, H. L. & Opschoor, H. (ed), 1998.
- Background reading
1. Maritime Economics (3rd), Martin Stopford, ISBN: 978-0-415-27557-6
 2. The Blackwell Companion to Maritime Economics, Wayne K. Talley (ed), ISBN: 978-1-4443-3024-3

Air transportation part:

1. Adams, W.J., Yellen, J.L., 1976. Commodity bundling and the burden of monopoly. *Quarterly Journal of Economics* 90, 475–498.
2. Bulow, J.I., Geanakoplos, J.D. and Klemperer, P.D. (1985), Multimarket oligopoly: Strategic substitutes and complements, *Journal of Political Economy* 93: 488-511.
3. Czerny, A. I., Verhoef, E. T. and Zhang, A. (2015), A theory of continuous uncertainty types, *Tinbergen Institute Discussion Paper TI 2015-065/VIII*.
4. De Neufville, R. and Odoni, A. (2003), *Airport Systems: Planning, Design and Management*, McGraw-Hill.
5. Fudenberg, D. and Tirole, J. (1984), The fat-cat effect, the puppy-dog ploy, and the lean and hungry look, *American Economic Review*, 74: 361-366
6. Spence, A.M., (1975). Monopoly, quality and quantity regulation in monopoly. *Bell Journal of Economics* 6, 407–414.
7. Spengler, J. J. (1950), Vertical integration and antitrust policy, *Journal of Political Economy* 58, 347—352.
8. Vickrey, W.S. (1969), Congestion theory and transport investment, *American Economic Review* 59, 251–260.

	<p>9. Vives, X. (1999), <i>Oligopoly Pricing — Old Ideas and New Tools</i>, The MIT Press.</p> <p>10. Weitzman, M.L. (1974), Prices vs. quantities. <i>Review of Economic Studies</i> 41 (4), 477–491.</p> <p>11. Zhang, A. and Czerny, A. I.(2012), Airports and airlines economics and policy: An interpretive review of recent research, <i>Economics of Transportation</i> 1: 15-34.</p>
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