

UK LEVEL: 5
UK CREDITS: 15

(Previously: LM 3030 TRANSPORTATION AND INTERMODAL SYSTEMS)
 (Updated: FALL 2026)

PREREQUISITES:	None								
CATALOG DESCRIPTION:	Transportation systems and intermodal shipping networks; key principles governing transportation planning; transportation and logistics concepts.								
RATIONALE:	This module provides students with a solid foundation of transportation demand and supply analysis. In addition, it presents the main components of transportation systems and their pricing methods and familiarizes students with freight transportation modelling.								
LEARNING OUTCOMES:	As a result of taking this module, the student should be able to: 1. Identify the characteristics of transportation systems and discuss their role and impact in intermodal shipping networks. 2. Demonstrate knowledge and understanding of the relationship between supply and demand in transport 3. Explain the key components of passenger and freight transportation modelling. 4. Analyse different types of decision-making involved in transportation systems, including transportation modes, network design options, trade-offs and pricing.								
METHOD OF TEACHING AND LEARNING:	In congruence with the teaching and learning strategy of the college, the following tools are used: • Classes consist of lectures, discussions, collaborative in-class small projects and specialized video presentations. • Office Hours: Students are encouraged to make full use of the office hours of their instructor in order to consult and discuss issues related to the course's content. • Use of blackboard platform, where instructors post lecture notes, assignments instructions, timely announcements, as well as additional resources.								
ASSESSMENT:	Summative: <table border="1"> <tr> <td>First Assessment:</td><td></td></tr> <tr> <td>Team project (3-4 students per group, 4,000-5,000 words; peer evaluation and reflection) AND Presentation</td><td>60%</td></tr> <tr> <td>Final Assessment: Multiple Choice Questions</td><td>40%</td></tr> </table> Formative: <table border="1"> <tr> <td>Coursework - case studies and experiential exercises</td><td>0%</td></tr> </table> The formative coursework aims to prepare students for the summative assessments. The written project tests Learning Outcome 1,2. The final examination tests Learning Outcomes 3,4. Students are required to resit failed assessments in this module.	First Assessment:		Team project (3-4 students per group, 4,000-5,000 words; peer evaluation and reflection) AND Presentation	60%	Final Assessment: Multiple Choice Questions	40%	Coursework - case studies and experiential exercises	0%
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Coursework - case studies and experiential exercises	0%								
INDICATIVE READING:	REQUIRED READING:								

	Jean-Paul Rodrigue (2024), The Geography of Transport Systems, SIXTH EDITION, New York: Routledge, 402 pages. ISBN 9781032380407, DOI: 10.4324/9781003343196 MD Sarder (2020). Logistics Transportation Systems. Elsevier, https://doi.org/10.1016/C2017-0-04218-0 RECOMMENDED READING: A. BOOKS - Lee, S., Farmer, D., & Kim, H. (2026). Transportation and mobility technology futures: Intelligent systems, decarbonization and micromobility. Routledge. - Kumar, I., & Maitri, V. (2026). Smart freight logistics: Intelligent transport systems and emerging technologies. Routledge. (https://www.routledge.com/Smart-Freight-Logistics-Intelligent-Transport-Systems-and-Emerging-Technologies/Kumar-Maitri/p/book/9781041112150) - Coyle, J. J., Novack, R. A. & Gibson, B. (2018). <i>Transportation: A Global Supply Chain Perspective</i>, latest edition. South-Western Cengage Learning. - Davis, V. O. (2023). Inclusive transportation : A manifesto for repairing divided communities. Island Press. B. ARTICLES - Bo Sun, Zehui Xu, Ming Wei, Xin Wang, A study on the strategic behavior of players participating in air-rail intermodal transportation based on evolutionary games, Journal of Air Transport Management, Volume 126, 2025, 102793, ISSN 0969-6997, https://doi.org/10.1016/j.jairtraman.2025.102793. - Xinyu Xiang, Jianwei Ren, Zhijun Gao, Intermodal transport route selection: integrating machine learning and range adjusted measure, Transportation Letters, 2025, ISSN 1942-7867, https://doi.org/10.1080/19427867.2025.2548913. - Funda Ture Kibar, Yakup Betus, Hediye Tuydes-Yaman, Defining Transportation Systems Resilience under Natural Disasters: A Bibliometric Analysis Based on Mode, Metrics and Scope, Transportation Research Procedia, Volume 90, 2025, Pages 282-289, ISSN 2352-1465, https://doi.org/10.1016/j.trpro.2025.06.069. - Jianhong Ye, Lei Gao, Jihao Deng, Identifying the key factors of intermodal travel using interpretative ensemble learning, International Journal of Transportation Science and Technology, Volume 19, 2025, Pages 223-239, ISSN 2046-0430, https://doi.org/10.1016/j.ijtst.2024.09.004. - Lisa Björk, Inge Vierth, Kevin Cullinane, Freight modal shift: A means or an objective in achieving lower emission targets? The case of Sweden, Transport Policy, Volume 142, 2023, Pages 125-136, ISSN 0967-070X, https://doi.org/10.1016/j.tranpol.2023.08.013. - Pathak, D.K., Shankar, R. and Choudhary, A. (2021). "Performance assessment framework based on competitive priorities for sustainable freight transportation systems", Transportation Research Part D Transport and Environment, 90, 102663.
INDICATIVE MATERIAL: (e.g. audiovisual, digital material, etc.)	REQUIRED MATERIAL: Click or tap here to enter text. RECOMMENDED MATERIAL: Click or tap here to enter text.
COMMUNICATION REQUIREMENTS:	Use of appropriate academic conventions as applicable in oral and written communications.

SOFTWARE REQUIREMENTS:	MS Office and Blackboard CMS
WWW RESOURCES:	Students are expected to use the internet at their own discretion to select information on the module. Useful sources include: ▪ http://www.trb.org/Main/Home.aspx ▪ http://ec.europa.eu/transport/index_en.htm ▪ http://www.eppgroup.eu/tran ▪ http://www.ciltna.com
INDICATIVE CONTENT:	1. The role and importance of transportation 2. Transportation and the economy 3. Transportation technology 4. Resilience in transport networks 5. Transportation, energy, and the environment 6. Safety and security in transportation systems 7. Costing and pricing for transportation 8. Transportation modes, modal competition, and modal shift 9. Intermodal transportation 10. Transportation terminals 11. Urban mobility and passenger transportation 12. Passenger and Freight Transportation Models 13. Transport Governance 14. Transport planning and policy