DEREE COLLEGE SYLLABUS FOR:	**US CREDITS: 3/0/3**
LM 3030 TRANSPORTATION AND INTERMODAL SYSTEMS – LEVEL 5 (Updated Fall 2021)	**UK CREDITS: 15**
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 and supply chain management. 2. Demonstrate knowledge and understanding of the relationship between supply and demand in transport and explain the key components of freight transportation modelling and its impact on running effective and efficient supply chains. 3. 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:** First Assessment: Term project (group, 4,000-4,500 words; presentation of group project; peer evaluation and reflection) — **60%** Final Assessment: Written Examination (Essay-type questions) — **40%** **Formative:** Coursework - case studies and experiential exercises — 0% In-class I-hour “diagnostic” test - formative — 0% The formative coursework aims to prepare students for the major written project and the final examination. The written project tests Learning Outcome 1. The final examination tests Learning Outcomes 2 and 3.
INDICATIVE READING:	**REQUIRED MATERIAL:** • MD Sarder (2020). *Logistics Transportation Systems*. Elsevier,

	https://doi.org/10.1016/C2017-0-04218-0
	RECOMMENDED READING: **A. BOOKS** ▪ Coyle, J. J., Novack, R. A. & Gibson, B. (2015). *Transportation: A Global Supply Chain Perspective*, latest edition. South-Western Cengage Learning. ▪ Beresford, A. and Pettit, S., 2017. International freight transport. Kogan Page. ▪ Christopher, M., 2016. Logistics and supply chain management. 5th edn. Financial Times/ Prentice Hall. ▪ Monios, J. and Bergqvist, R., 2017. Intermodal freight transport and logistics. Taylor & Francis Group. ▪ Rodrigue, J.-P., 2020. The geography of transport systems. Routledge. ▪ Reis, V. and Macario, R., 2019. Intermodal Freight Transport. Elsevier. **B. ARTICLES** ▪ Muñoz-Villamizar, A., Santos, J., Montoya-Torres, J.R., and Velázquez-Martínez, J.C. (2020). "Measuring environmental performance of urban freight transport systems: A case study," *Sustainable Cities and Society*, 52, 101844. ▪ Di Febbraro, A., Sacco, N., and Saeednia, M. (2016). "An agent-based framework for cooperative planning of intermodal freight transport chains," *Transportation Research Part C: Emerging Technologies*, 64. ▪ Yan, B., Zhu, X., Lee, D., Jin, J.G., Wang, L. (2020). "Transshipment Operations Optimization of Sea-rail Intermodal Container in Seaport Rail Terminals," *Computers & Industrial Engineering*,106296. ▪ Bergqvist, R., Macharis, C., Meers, D., and Woxenius, J. (2015). "Making hinterland transport more sustainable a multi actor multi criteria analysis," *Research in Transportation Business and Management*, 14, pp. 80-89. ▪ Neal, C, and Koo, T.R. (2020). "Demand for cargo airships: An analysis of mode choice decision making in the freight transport industry," *Journal of Air Transport Management*, 83, 101741. ▪ Topp, H.H. (2002). "Traffic 2042 – mosaic of a vision," *Transport Policy,* 9. ▪ Hasan, K.R., Zhang, W., and Shi, W. (2021). "Barriers to intermodal freight diversion: a total logistics cost approach", *Maritime Economics and Logistics*. ▪ Woxenius, J., Macharis, C., Meers, D., and Woodburn, A. (2017) "Intermodal freight transport management," *Research in Transportation Business andManagement*, 23. ▪ Amaya, J., Arellana, J., and Delgado-Lindeman, M. (2020). "Stakeholders perceptions to sustainable urban freight policies in emerging markets," *Transportation Research Part A: Policy and Practice*, 132, pp. 329-348. ▪ Pinto, J. Mistage, O. Bilotta, P. and Helmers, E. (2018). "Road-rail intermodal freight transport as a strategy for climate change mitigation," *Environmental Development*, 25. ▪ Labib A., and Anson J. (2020). "Benchmarking the sustainability reporting of high-speed railways (HSRs): Towards a state-of-the-art benchmarking and reporting framework for HSRs," *Journal of Cleaner Production*, 250. ▪ Lam, S., Taghia, J., and Katupitiya, J. (2016). "Evaluation of a transportation system employing autonomous vehicles," *Journal of Advanced Transportation*, 50 (8), pp. 2266-2287. ▪ Li, L., Negenborn, R.R., and De Schutter, B. (2015). "Intermodal freight transport planning – A receding horizon control approach," *Transportation Research Part C: Emerging Technologies,* 60. ▪ Tavasszy, L.A. (2019). "Predicting the effects of logistics innovations on freight systems: Directions for research," *Transport Policy*. ▪ Myrkhalykov, Z.U., Issambayeva, A.Z., Yessirkepova, A.M., and Missyul, E.E. (2016). "The global transport system and its role in enhancing the adaptive textile industry," *Izvestiya Vysshikh Uchebnykh Zavedenii,*

	Seriya Teknologiya Tekstil'noi Promyshlennosti, pp. 32-39. ▪ 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. ▪ Raina, S., Madapur, B., and Kollarath, R.M. (2019). "Green transportations systems – a step towards sustainable cities," *International Journal of Recent Technology and Engineering*, 8, pp. 924-926. ▪ Wior, I., Jerenz, S., and Fay, A. (2018). "Automated transportation systems subject to interruptions in production and intralogistics - A survey and evaluation," *International Journal of Logistics Systems and Management*, 30 (4), pp. 421-457.
COMMUNICATION REQUIREMENTS:	Use of appropriate academic conventions as applicable in oral and written communications.
SOFTWARE REQUIREMENTS:	MS Office.
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. Costing and pricing for transportation 5. Transportation modes, modal competition, and modal shift 6. Intermodal transportation and containerization 7. Transportation terminals 8. Intermodal hubs, gateways, and maritime clusters 9. Urban and passenger transportation 10. Transportation, energy, and the environment 11. Governmental roles in transportation (transport planning and policy) 12. Transportation risk management 13. Issues and challenges for global supply chains