DEREE COLLEGE SYLLABUS FOR:	**US CREDITS: 3/0/3**
MG 4477 CONTEMPORARY ISSUES AND SUPPLY CHAIN 4.0 – LEVEL 6 (Fall 2021)	**UK CREDITS: 15**
PREREQUISITES:	LM 2020 Introduction to Logistics & Supply Chain Management LM 3025 Logistics Systems MA 2021 Applied Statistics MG 2003 Management Principles
CATALOG DESCRIPTION:	Contemporary issues in supply chain management in the digital era. Impact of artificial intelligence, blockchain, Internet of Things, robotics and 3D printing on supply chain.
RATIONALE:	In the current era of global digital transformation where new business models appear and extensive opportunities are generated, understanding of technology becomes imperative for the successful management of supply chain operations. Students need to be able to appreciate the effects of technological evolution on contemporary supply chains. Through case study analysis students will acquire hands-on knowledge of the application of the 4.0 revolution on contemporary supply chains.
LEARNING OUTCOMES:	On successful completion of this module, the student will be able to: 1. Assess contemporary developments in supply chains and analyse the opportunities offered within an ethical and socially responsible context. 2. Evaluate different supply chain 4.0 theoretical frameworks in light of current supply chain developments. 3. Synthesize and apply the knowledge gained to improve customer satisfaction, supply chain efficiency and increase profit potential.
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 of selected cases of how new business models have transformed businesses, showings of selected educational videos, and in-class student presentations.
ASSESSMENT:	**Summative:** First Assessment: Written project (Individual; 2,300-2,700 words) — **60%** Final Assessment: Written examination (Essay-type questions) — **40%** **Formative:** Assignment of small, targeted research studies where students identify and critically analyze the competitive advantage that advanced operations are providing. — **0%** The formative coursework aims to prepare students for the two written assessments. The first assessment tests Learning Outcomes 2 and 3. The second assessment tests Learning Outcome 1.
INDICATIVE READING:	**RECOMMENDED MATERIAL:** Students are required to delve into the logistics and supply chain management literature. The articles below are indicative of the topics, as well as type of readings that will be discussed in this course.

RECOMMENDED READING:

ARTICLES:

- Amaral, A. and Peças, P. (2021), "SMEs and Industry 4.0: Two case studies of digitalization for a smoother integration", *Computers in Industry*. DOI: 10.1016/j.compind.2020.103333
- Liu, Y. Zhu, Q. and Seuring, S.(2020), "New Technologies in Operations and Supply Chain: Implications for Sustainability", *International Journal of Production Economics*, DOI: 10.1016/j.ijpe.2020.107889
- Abdirad M. and Krishnan, K. (2020), "Industry 4.0 in Logistics and Supply Chain Management: A Systematic Literature Review", *Engineering Management Journal*, DOI: 10.1080/10429247.2020.1783935
- Frank, A.G., Dalenogare, L.S., & Ayala, N.F. (2019). "Industry 4.0 technologies: Implementation patterns in manufacturing companies", *International Journal of Production Economics*, Vol. 210, pp. 15-26
- Gerd J. Hahn, G.J. (2019). "Industry 4.0: a supply chain innovation perspective", *International Journal of Production Research*, to be published
- Ghobakhloo, M. (2018), "The future of manufacturing industry: a strategic roadmap toward Industry 4.0", *Journal of Manufacturing Technology Management*, Vol. 29 No. 6, pp. 910-936.
- Gligor, D., Gligor, N., Holcomb, M. and Bozkurt, S. (2019), "Distinguishing between the concepts of supply chain agility and resilience: A multidisciplinary literature review", *International Journal of Logistics Management, The*, Vol. 30 No. 2, pp. 467-487.
- Klingenberg, C., Borges, M. and Antunes Jr, J. (2019), "Industry 4.0 as a data-driven paradigm: a systematic literature review on technologies", *Journal of Manufacturing Technology Management*, Vol. ahead-of-print No. ahead-of-print.
- Liao, Y., Deschamps, F., de Freitas, E., Loures, R. & Ramos, L.F.R. (2017). "Past, present and future of Industry 4.0 - a systematic literature review and research agenda proposal", *International Journal of Production Research.,* Vol. 55 No. 12, pp. 3609-3629.
- Liboni, L., Cezarino, L., Jabbour, C., Oliveira, B. and Stefanelli, N. (2019), "Smart industry and the pathways to HRM 4.0: implications for SCM", *Supply Chain Management*, Vol. 24 No. 1, pp. 124-146.
- Moody, K. (2019). "Labour and the contradictory logic of logistics". *Work Organisation, Labour & Globalisation*, Vol. 13 No. 1, pp. 79-95
- Nilsson, F. (2019), "A complexity perspective on logistics management: Rethinking assumptions for the sustainability era", *International Journal of Logistics Management, The*, Vol. 30 No. 3, pp. 681-698.
- Sanders, N.R., Boone, T., Ganeshan, R. and Wood, J.D. (2019). "Sustainable Supply Chains in the Age of AI and Digitization: Research Challenges and Opportunities". *J Bus Logist*, Vol. 40, pp. 229-240.
- Schmidt, C.G. and Wagner, S.M. (2019). "Blockchain and supply chain relations: A transaction cost theory perspective". *Journal of Purchasing and Supply Management*, Vol. 25 No. 4, 10055
- Thürer,M., Tomašević, I., Stevenson, M., Blome, C., Melnyk, S., Chan, H.K. & Huang, G.Q (2019). "A systematic review of China's belt and road initiative: implications for global supply chain management", *International Journal of Production Research*.
- Tortorella, G., Giglio, R. and van Dun, D. (2019), "Industry 4.0 adoption as a moderator of the impact of lean production practices on operational performance improvement", *International Journal of Operations & Production Management*, Vol. ahead-of-print No. ahead-of-print.
- Veile, J., Kiel, D., Müller, J. and Voigt, K. (2019), "Lessons learned from Industry 4.0 implementation in the German manufacturing industry",

	Journal of Manufacturing Technology Management, Vol. ahead-of-print No. ahead-of-print. • Wang, G., Gunasekaran, A., Ngai, E.W.T. & Papadopoulos, T. (2016). "Big data analytics in logistics and supply chain management: Certain investigations for research and applications". *International Journal of Production Economics,* Vol. 176, pp. 98 - 110 • Wang, Y., Singgih, M., Wang, J., & Rit, M. (2019). "Making sense of blockchain technology: How will it transform supply chains?", *International Journal of Production Economics*, Vol. 211, pp. 221-236 • Winkelhaus, S. & Grosse, E.H (2019). "Logistics 4.0: a systematic review towards a new logistics system", *International Journal of Production Research*, to be published • Xu, L.D., Xu, E.L. & Li, L. (2018). "Industry 4.0: state of the art and future trends", *International Journal of Production Research*, Vol. 56 No. 8, pp. 2941-2962
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: www.napm.org www.itsa.org www.clml.org www.logisticsworld.com www.logistics-management.gr www.logisticsonline.com www.ReutersBusinessInsight.com/login.asp www.Capterra.com www.kmtbrrr.com/index.php?option=com_content&task=view&... www.spitrans.com/services/logistics-management.asp www.leanrapid.com/supplychain/logistics_management.asp www.jobisjob.com/logistics+management+specialist/jobs www.lmslogistics.com/awards.asp www.securitypackaging.com/reverse-logistics-management.php www.getlogisticsmanagementjobs.com
INDICATIVE CONTENT:	1. Collaborative Supply Chains 2. Ethics in Supply Chain Management 3. Green Considerations in Supply Chain Management 4. Supply Chain Integration 5. CRM and Supply Chain Management 6. Technology and Supply Chain Management 7. Artificial Intelligence / Machine Learning 8. Big Data / Business Intelligence / Business Analytics 9. Block chain 10. Drones 11. Internet of Things 12. Location Based technologies / Virtual reality 13. 3D printing 14. Robotics