WN802 SPECIAL TOPICS IN HUMANITARIAN OPERATIONS MANAGEMENT 4-0-0-4

Objective of course

- To provide students with an understanding of humanitarian operations by introducing the students to the context of humanitarian operations, the stakeholders and the strategies/activities,and the challenges in conducting research in **humanitarian operations.**
- To help students critique articles and developing new research ideas.
- To help students implement a research study with the potential to submit to a journal.

Prerequisites

Basic understanding of demand and supply issues in humanitarian operations.

Learning resources

Journal articles and select chapters/readingsfrom text books.Articles indicated in the course schedule will be progressively distributed over the semester.

Pedagogy

The student will be exposed to seminal articles that have been selected based on the relevance to a domain of knowledge and/or important research methods. A significant component of the learningwould be to review/critique empirical and analyticalarticles in Humanitarian Operations Management.The primary focus of such critique isto assess the logical and contextualappropriateness of the study. The processof critiquing wouldenablediscovery and learning of the key subject areas.

Evaluation

Performance in the course will be evaluated as follows.

Article analysis and/or short presentation of the articles: (40%)

Every session will include discussion of multiple research articles that relate to a specific subject area in humanitarian operations. The discussion would involve brief summarizationof the main topic (which should be familiar to all participants), a review/critique of the work with respect to related works, appropriateness of the research methods,and findings and limitations. The student needs to bring his/her own perspective on the ideas expressed in the research paper. A good review/critique poses interesting questions, cites additional literature, extends the models and stimulates further inquiry and class discussion.

Final Exam: (20%)

There will be a cumulative final exam covering all assigned articles and in-class discussions. The test will aim to test the student's ability to formulate and understand research problems and design andinvestigate approaches to find answers to the issues of interest. **Taking good notes of all readings and lectures can be very helpful in doing well in this exam!**

Term paper: (40%)

Participants will submit an individual term paper based on an analytical/empirical research. Each student is encouraged to planearly about the paper and engage in data collectionor model formulation bythe second quarter of the semester. Formulating a model, or collecting and analyzing

data on a topic of one's individual interest can be very useful in effective learning. The term paper should be a short empirical/analytical research note, consisting of a brief description of the research question, a small literature review highlighting the issues of interest, a statement of research methodology, model and analysis, and a discussion of key findings and conclusions. The paperneed not have the same level of rigor and comprehensiveness as that of apublished analytical/empirical research paper. However, there should be the potential to publish in a good academic journal.

The deadline for the term paper proposals will be in the week after the last session of the course; the deadline to complete the papers will be 8 weeks after that. If the term paper is not completed in 8 weeks then an incomplete grade will be assigned; the incomplete grade can be revised if the paper is submitted within 16 weeks of the last session of the course. Failure to submit the term paper within 16 weekswill result in a failing grade.

Course Schedule:
The following course schedule will be maintained. Instructor may modify the schedule as necessary to enhance learning effectiveness.

Session 1:Introduction to humanitarian operations
Readings:

- Lee, H. (2004). "A Triple A supply chain", Harvard Business Review, October.
- Thomas K.S. and Kopzack L. R. (2005). From Logistics to supply chain management: the path forward in the humanitarian sector.*Fritz Institute Report.*
- Holguín-Veras, J., Jaller, M., Van Wassenhove, L. N., Pérez, N., &Wachtendorf, T. (2012). On the unique features of post-disaster humanitarian logistics. *Journal of Operations Management*, *30*(7), 494-506.
- Holguín-Veras, J., Pérez, N., Jaller, M., Van Wassenhove, L. N., &Aros-Vera, F. (2013). On the appropriate objective function for post-disaster humanitarian logistics models. *Journal of Operations Management*, *31*(5), 262-280.
- A. Nagurney and Q. Qiang, 2012. Fragile networks: Identifying vulnerabilities and synergies in an uncertain world, *International Transactions in Operational Research* 19, 123-160.

Session 2: Information Management
Readings:

- Altay, N., Labonte, M. (2014).Challenges in humanitarian information management and exchange: evidence from Haiti. Disasters. *John Wiley and SonsLtd.*
- Altay, N., & Pal, R. (2014). Information diffusion among agents: implications for humanitarian operations. *Production and Operations Management*, *23*(6), 1015-1027.
- Li, J., Li, Q., Liu, C., Khan, S. U., & Ghani, N. (2014). Community-based collaborative information system for emergency management. *Computers & Operations Research*, *42*, 116-124.
- Yates, D., & Paquette, S. (2011). Emergency knowledge management and social media technologies: A case study of the 2010 Haitian earthquake. *International Journal of Information Management*, *31*(1), 6-13.
- Zhang, D., Zhou, L., &Nunamaker Jr, J. F. (2002). A knowledge management framework for the support of decision making in humanitarian assistance/disaster relief. *Knowledge and Information Systems*, *4* (3), 370-385.

- Wallace, W. A., & De Balogh, F. (1985). Decision support systems for disaster management. *Public Administration Review*, 134-146.

Session 3: Coordination and Collaboration in relief supply chain
Readings:

- B. Balcik, B. M. Beamon, C. C. Krejci, K. M. Muramatsu, and M. Ramirez, 2010. Coordination in humanitarian relief chains: Practices, challenges and opportunities, *International Journal of Production Economics* 126, 22-34
- Rangan, S., Samii, R., & Van Wassenhove, L. N. (2006). Constructive partnerships: When alliances between private firms and public actors can enable creative strategies. *Academy of Management Review*, *31*(3), 738-751.
- Coles, J. B., Zhuang, J., & Yates, J. (2012). Case study in disaster relief: A descriptive analysis of agency partnerships in the aftermath of the January 12th, 2010 Haitian earthquake. *Socio-Economic Planning Sciences*, *46*(1), 67-77.
- Maon, F., Lindgreen, A., &Vanhamme, J. (2009). Developing supply chains in disaster relief operations through cross-sector socially oriented collaborations: a theoretical model. *Supply Chain Management: An International Journal*, *14*(2), 149-164.
- Schulz, S. F., &Blecken, A. (2010). Horizontal cooperation in disaster relief logistics: benefits and impediments. *International Journal of Physical Distribution & Logistics Management*, *40*(8/9), 636-656.
- Yi, W., &Özdamar, L. (2007). A dynamic logistics coordination model for evacuation and support in disaster response activities. *European Journal of Operational Research*, *179*(3), 1177-1193.

Session 4: Procurement for Humanitarian Operations Management
Readings:

- Balcik, B. and Ak, D. (2014). Supplier Selection for Framework Agreements in Humanitarian Relief. *Production and Operations Management*, 23(6): 1028-1041.
- Bagchi, A. Paul, J. A., and Maloni, M. (2011). Improving bid efficiency for humanitarian food aid procurement. 234: 238-245.

Session 5: Facility Location in Humanitarian Operations Management
Readings:

- Hale, T. and Moberg, C. R. (2005). Improving supply chain disaster preparedness: A decision process for secure site location. *International Journal of Physical Distribution Logistics Management.* 37(2): 99-114.
- Balcik, B., & Beamon, B. M. (2008). Facility location in humanitarian relief. *International Journal of Logistics*, *11*(2), 101-121.
- Roh, S. Y., Jang, H. M., & Han, C. H. (2013). Warehouse location decision factors in humanitarian relief logistics. *The Asian Journal of Shipping and Logistics*, *29*(1), 103-120.

Session 6: Transportation and Logistics in Humanitarian Operations Management
Readings:

- Kovacs, G. and Spens, K. M. (2007). Humanitarian logistics in disaster relief operations, International Journal of Physical Distribution and Logistics Management. 37(2): 99-114.

- Wassenhove, L. Van. (2006). Blackett Memorial Lecture Humanitarian aid logistics: supply chain management in high gear. *Journal of Operations Research Society.* 475: 489.
- Balcik, B., Beamon, B. M., &Smilowitz, K. (2008). Last mile distribution in humanitarian relief. *Journal of Intelligent Transportation Systems*, *12*(2), 51-63.
- Martinez, A. J. P., Stapleton, O., & Van Wassenhove, L. N. (2011). Field vehicle fleet management in humanitarian operations: a case-based approach. *Journal of Operations Management*, *29*(5), 404-421.
- Luis, E., Dolinskaya, I. S., &Smilowitz, K. R. (2012). Disaster relief routing: Integrating research and practice. *Socio-economic planning sciences*, *46*(1), 88-97.

Session 7: Performance Assessment

- B. M. Beamon and B. Balcik, 2008. Performance measurement in humanitarian relief chains, *International Journal of Public Sector Management* 21, 4-25
- Talluri, S. S., Kull, T. J., Yildiz, H., & Yoon, J. (2013). Assessing the efficiency of risk mitigation strategies in supply chains. *Journal of Business logistics*, *34*(4), 253-269.
- Käki, A., Salo, A., &Talluri, S. (2013). Disruptions in supply networks: a Probabilistic Risk Assessment approach.
- Yildiz, H., Yoon, J., Talluri, S., & Ho, W. (2014). *Reliable Supply Chain Network Design*. Working paper.

Session 8: Organization Structure

Readings:

- Q. Qiang and A. Nagurney, 2012. A bi-criteria indicator to assess supplychain network performance for critical needs under capacity and demand disruptions, *Transportation Research A,* 46(5), 801-812.
- A. Nagurney, A. H. Masoumi, and M. Yu, 2012. Supply chain network operations management of a blood banking system, *Computational Management Science*, 9(2), 205-231.
- Gatignon, A., Wassenhove, L. N.Van, Charles, Aureli (2010). The Yogyakarta earthquake: Humanitarian relief through IFRC's decentralized supply chain. International Journal of Production Economics. 126: 102-110.

Session 9: Funding and Donation Management

Readings:

- F. Toyasaki and T. Wakolbinger, 2011. Impacts of earmarked private donations for disaster fundraising, *Annals of Operations Research.*
- Destro and J. Holguin-Veras, 2010. Estimating material convergence: Flow of donations for Hurricane Katrina, RPI Working Paper.
- Chang, Y., Wilkinson, S., Potangaroa, R., & Seville, E. (2011). Identifying factors affecting resource availability for post-disaster reconstruction: a case study in China. *Construction Management and Economics*. 29(1): 37-48.
- Stapleton, O., Van Wassenhove, L. N., &Tomasini, R. (2010, September). The Challenges of Matching Corporate Donations to Humanitarian Needs and the Role of Brokers. In *Supply Chain Forum: an International Journal* (Vol. 11, No. 3, pp. 42-53). KEDGE Business School.

Session 10: Excellence in Humanitarian Operations
Readings:

- Altay, N., & Green, W. G. (2006). OR/MS research in disaster operations management. *European journal of operational research*, *175*(1), 475-493.
- Tomasini, R. M., & Van Wassenhove, L. N. (2009). From preparedness to partnerships: case study research on humanitarian logistics. *International Transactions in Operational Research*, *16*(5), 549-559.
- Pettit, S., & Beresford, A. (2009). Critical success factors in the context of humanitarian aid supply chains. *International Journal of Physical Distribution & Logistics Management*, *39*(6), 450-468.
- Tatham, P., &Kovács, G. (2010). The application of "swift trust" to humanitarian logistics. *International Journal of Production Economics*, *126*(1), 35-45.

(Note: Any of the above sessions can be substituted with one/two sessions on alternate themesin case it is felt appropriate!)