



Course program and reading list

Semester 1 Year 2023

School: School of Sustainability Founded by Israel Corp. ICL

Food Systems in the Modern Age

Lecturer:

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Course No.:	Course Type :	Weekly Hours :	Credit:
3247	Lecture	2	2

Course Requirements :	Group Code :	Language:
Final Paper	231324700	English



Course Description

Food systems in the modern age.



Course Goals

The overarching aims of this course, entitled "Food Systems in the Modern Age", are to provide third year students with a better and more profound understanding of the global food system, including analysis of various phenomena that affect, or affected by, the global food system.

By the end of the course participants will be able to appreciate, and critically appraise, the following important phenomena and principles: emergence of food systems, their underpinnings, structures, dynamics, dependences, distortions and asymmetries; the risks

they may engender and the risks to which they are exposed.

In addition, participants will understand in principle how dynamic systems develop and function, as well as the manifold pathways to intervene in dynamic systems and particularly in systems of food production, processing and provision.

Grading

This course comprises of two assignments: a written piece of original work, and an oral presentation and PowerPoint file that draws on the written work.

Both assignments will be carried out in pairs (teams of 2 participants each) and will contribute towards the final mark as follows:

The paper's grade will make 90% of the final mark.

A presentation delivered by the team and a PowerPoint file will make 10% of the final mark.

Please see the separate "final paper and presentation" guidelines and assessment criteria.

Attendance in classes is mandatory.

Reading List

Please note this is not an exhaustive nor final list; additional reading materials and various types of content are provided in the course webpage in Moodle as well as in class presentations.

The most essential readings, and those necessary for the completion of the course assignments, will be highlighted in classes throughout the course.

Wiethoelter, A. K., Beltrán-Alcrudo, D., Kock, R., & Mor, S. M. (2015). Global trends in infectious diseases at the wildlife–livestock interface. *Proceedings of the National Academy of Sciences*, 112(31), 9662–9667.

Yuan, S., Jiang, S. C., & Li, Z. L. (2020). Analysis of Possible Intermediate Hosts of the New Coronavirus SARS-CoV-2. *Frontiers in Veterinary Science*, 7.

Meadows, D. H. (2008). *Thinking in systems: A primer*. Chelsea Green publishing.

Meadows, D. H. (1999). *Leverage points: Places to intervene in a system*.

Meadows, D. (1997). *Places to Intervene in a System*. *Whole Earth*, 91(1), 78–84.

Rocha, J. C., Peterson, G., Bodin, Ö., & Levin, S. (2018). Cascading regime shifts within and across scales. *Science*, 362(6421), 1379–1383.

Smil, V. (2001). *Feeding the World. A Challenge for the Twenty-First Century*. MIT Press.

Alexandratos, N., & Bruinsma, J. (2012). *World agriculture towards 2030/2050: the 2012 revision* (Vol. 12, No. 3). FAO, Rome: ESA Working paper.

Food and Agricultural Organization (2017). *The State of Food Security and Nutrition in the World, the Food and Agriculture Organization of the United Nations*, Rome.

Speedy, A.W. (2016). Overview of world feed protein needs and supply. Animal Production and Health Division. The Food and Agriculture Organization of the United Nations, Rome.

Springmann, M., Clark, M., Mason-D'Croz, D., Wiebe, K., Bodirsky, B. L., Lassaletta, L., & Jonell, M. (2018). Options for keeping the food system within environmental limits. *Nature*, 562(7728), 519.

Gregory, P. J., Ingram, J. S., & Brklacich, M. (2005). Climate change and food security. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 360(1463), 2139-2148.

Gilbert, N. (2012). One-third of our greenhouse gas emissions come from agriculture. *Nature*, 31, 10-12.

Lobell, D. B., & Gourdji, S. M. (2012). The influence of climate change on global crop productivity. *Plant physiology*, 160(4), 1686-1697.

Food and Agricultural Organization (2012). *The State of World Fisheries and Aquaculture: Opportunities and Challenges*. FAO, Rome.

Brinkman, H. J., & Hendrix, C. S. (2011). *Food Insecurity and Violent Conflict: Causes, Consequences, and Addressing the Challenges*, World Food Programme.

Natalini, D., Jones, A., & Bravo, G. (2015). Quantitative assessment of political fragility indices and food prices as indicators of food riots in countries. *Sustainability*, 7(4), 4360-4385.

Cribb, J. (2019). *Food or War*. Cambridge University Press.

Intergovernmental Panel on Climate Change (2019). *Climate Change and Land, Special Report*. IPCC. At: <https://www.ipcc.ch/srccl/>.

Brown, O. (2008). *Migration and climate change* (No. 31). United Nations Pubns.

Food and Agriculture Organization (2015). *Soils and food security*. FAO, Rome. At: http://www.fao.org/fileadmin/user_upload/soils-2015/docs/EN/EN_Print_IYS_food.pdf.

Harvell, C. D., Mitchell, C. E., Ward, J. R., Altizer, S., Dobson, A. P., Ostfeld, R. S., & Samuel, M. D. (2002). Climate warming and disease risks for terrestrial and marine biota. *Science*, 296(5576), 2158-2162.

Garrett, K. A., Dendy, S. P., Frank, E. E., Rouse, M. N., & Travers, S. E. (2006). Climate change effects on plant disease: genomes to ecosystems. *Annu. Rev. Phytopathol.*, 44, 489-509.

UN Environment (2019). *Global Environment Outlook 6*.

Parodi, A., Leip, A., De Boer, I. J. M., Slegers, P. M., Ziegler, F., Temme, E. H., ... & Van Loon, J. J.

A. (2018). The potential of future foods for sustainable and healthy diets. *Nature Sustainability*, 1(12), 782.

Tzachor, A., Richards, C. E., & Holt, L. (2021). Future foods for risk-resilient diets. *Nature Food*, 2(5), 326–329.