

S150 – Economics of Networks

Outline: The course introduces students to the economics of networks. This area of research has emerged in the last two decades and it has introduced a set of tools for economists to incorporate network structure in the analysis of individual behaviour and economic outcomes. Topics covered include the formation of networks, the provision of local public goods, coordination, learning, trading, and financial networks. A central focus of the course is the interplay between theory and experiments.

Most readings for the course are selected chapters from the following books:

- Jackson, M. O. *Social and economic networks*, PUP, 2010.
- Bramoulle Y, Galeotti A, Rogers B, editors. *The Oxford Handbook of the Economics of Networks*. OUP, 2016.

Below is the list of topics for each lecture with associated readings. Asterisks denote compulsory readings, papers without an asterisk are for students interested in learning more about each topic.

1. What networks are and why they matter.

- *Jackson, M. O. *Social and economic networks*. Chapters 1, 2, 3.
- Oxford Handbook. Chapters 2, 3 and 4.

2. The experimental methodology.

- *Camerer, C. *Behavioral Game Theory*, chapter 1.
- *Camerer and Fehr, “Measuring Social Norms and Preferences using Experimental Games: A Guide for Social Scientists,” published in “Foundations of Human Sociality – Experimental and Ethnographic Evidence from 15 SmallScale Societies,” edited by Henrich, et al.
- Crawford, V., “Theory and Experiment in the Analysis of Strategic Interaction,” Chapter 7 in Kreps, D. and Wallis, K., Editors, *Advances in Economics and Econometrics: Theory and Applications, 7th World Congress, Vol. I*, Cambridge 1997 (URL: <http://dss.ucsd.edu/vcrawfor/CrawfordThExp97.pdf>).
- Roth, A.E., “Game Theory as a Part of Empirical Economics,” *The Economic Journal*, 101 (404), 1991, 107-114.

Smith, V.L., “Microeconomic Systems as an Experimental Science,” *The American Economic Review*, 72 (5), 1982.

3. Network formation.

- *Jackson, M.O. *Social and economic networks*. Chapters 6, 11.1-4, 11.6.
- *Goeree, J.K., Riedl, A. and Ule, A., 2009. In search of stars: Network formation among heterogeneous agents. *Games and Economic Behavior*, 67(2), pp.445-466.

- Bala, V. and Goyal, S., 2000. A noncooperative model of network formation. *Econometrica*, 68(5), pp.1181-1229.
- Galeotti, A., Goyal, S. and Kamphorst, J., 2006. Network formation with heterogeneous players. *Games and Economic Behavior*, 54(2), pp.353-372.
- Jackson, M.O. and Wolinsky, A., 1996. A strategic model of social and economic networks. *Journal of Economic Theory*, 71(1), pp.44-74.
- Jackson, M.O. *Social and economic networks*. Chapter 5.

4. Local public goods games on a network.

- *Jackson, M.O. *Social and economic networks*. Chapter 9.1-9.7.
- *Charness, G., Feri, F., Melendez-Jimenez, M.A. and Sutter, M., 2014. Experimental games on networks: Underpinnings of behavior and equilibrium selection. *Econometrica*, 82(5), pp.1615-1670.
- *Oxford Handbook. Chapter 17.2.2.
- Rosenkranz, S. and Weitzel, U., 2012. Network structure and strategic investments: An experimental analysis. *Games and Economic Behavior*, 75(2), pp.898-920.
- Bramoulle, Y. and Kranton, R., 2007. Public goods in networks. *Journal of Economic Theory*, 135(1), pp.478-494.

5. Strategic complementarities on a network.

- *Jackson, M.O. *Social and economic networks*. Chapter 9.1-9.7.
- *Gallo, E. and Yan, C., 2015. Efficiency and equilibrium in network games:

An experiment. *Cambridge-INET Working Paper Series*, 1503.

- *Oxford Handbook. Chapter 17.2.1.
- Ballester, C., Calvo-Armengol, A. and Zenou, Y., 2006. Who's who in networks. Wanted: The key player. *Econometrica*, 74(5), pp.1403-1417.
- Bramoulle, Y., Kranton, R. and D'Amours, M., 2014. Strategic interaction and networks. *American Economic Review*, 104(3), pp.898-930.

6. Social learning.

*Jackson, M.O. *Social and economic networks*. Chapter 8.

- *Oxford Handbook. Chapter 17.2.5.
- *Corazzini, L., Pavesi, F., Petrovich, B. and Stanca, L., 2012. Influential listeners: An experiment on persuasion bias in social networks. *European Economic Review*, 56(6), pp.1276-1288.
- Oxford Handbook. Chapter 19.
- Golub, B. and Jackson, M.O., 2010. Naive learning in social networks and the wisdom of crowds. *American Economic Journal: Microeconomics*, 2(1), pp.112-49.
- Bala, V. and Goyal, S., 1998. Learning from neighbours. *The Review of Economic Studies*, 65(3), pp.595-621.

7. Cooperation on a network.

- *Jackson, M.O., Rodriguez-Barraquer, T. and Tan, X., 2012. Social capital and social quilts: Network patterns of favor exchange. *American Economic Review*, 102(5), pp.1857-97.
- *Oxford Handbook. Chapter 17.2.3.
- *Cassar, A., 2007. Coordination and cooperation in local, random and small world networks: Experimental evidence. *Games and Economic Behavior*, 58(2), pp.209-230.
- *Gallo, E. and Yan, C., 2015. The effects of reputational and social knowledge on cooperation. *Proceedings of the National Academy of Sciences*, 112(12), pp.3647-3652.
- Rand, D.G., Arbesman, S. and Christakis, N.A., 2011. Dynamic social networks promote cooperation in experiments with humans. *Proceedings of the National Academy of Sciences*, 108(48), pp.19193-19198.

8. Trading on a network.

- *Oxford Handbook. Chapter 27.
- *Gale, D.M. and Kariv, S., 2009. Trading in networks: A normal form game experiment. *American Economic Journal: Microeconomics*, 1(2), pp.114-32.
- *Choi, S., Galeotti, A. and Goyal, S., 2017. Trading in networks: Theory and experiments. *Journal of the European Economic Association*, 15(4), pp.784817.

9. Financial networks.

- *Oxford Handbook. Chapter 20.
- *Choi, S., Gallo, E. and Wallace, B., 2017. Financial Contagion in Networks:

A Market Experiment. Available at SSRN 2995918.

Allen, F. and Gale, D., 2000. Financial contagion. *Journal of Political Economy*, 108(1), pp.1-33.

- Caballero, R.J. and Simsek, A., 2013. Fire sales in a model of complexity. *The Journal of Finance*, 68(6), pp.2549-2587.
- Glasserman, P. and Young, H.P., 2015. How likely is contagion in financial networks?. *Journal of Banking & Finance*, 50, pp.383-399.