

Center for International Development at Harvard University



<http://www.cid.harvard.edu>

Networks and Economic Development

Ever wonder whether recent developments in Natural Sciences may impact the way we study economic systems? This semester CID will offer a new seven course seminar discussing networks, complexity and its implications for economic sciences. The course will be taught by Cesar A. Hidalgo PhD in Physics and a Research Fellow at CID. The Course will not be for credit and will only require classroom attendance.

Course Name: Networks, Complexity and Economic Development

Instructor: Cesar A. Hidalgo PhD.

Location: Perkins Room, Fourth Floor Rubenstein Building, Harvard Kennedy School, 79 JFK St, Cambridge MA.

Goal:

Networks are an ubiquitous way to represent complex systems, including those in the social and economic sciences. To make sense of complex systems in the social sciences and economics using networks it is important to study networks from a fundamental point of view. In this course we introduce the basic, natural science of networks and some applications to social and economic sciences. The course will also discuss some other topics in complexity science such as Chaos, Fractals and Power-Laws.

Summary:

Complex systems, such as the cell, cities or the economy, are formed by heterogeneous collections of components and interactions. During recent years the science of networks emerged as an alternative approach to analyze the structure and evolution of complex systems. In this seven course seminar we introduce the basic concepts and applications of network science, developed by natural scientists, for a social science audience. The seminar will cover (i) the most basic network models, (ii) the statistics used to characterize network structure and dynamics (iii) a few examples of applications in which these concepts have been applied, including applications to micro and macroeconomics.

Syllabus:

Class 1: Random and Small World Networks
Class 2: Scale-Free Networks
Class 3: Characterizing Network Topology
Class 4: Community Structure
Class 5: Network Dynamics
Class 6: Networks in Biology
Class 7: Networks in Economy

Tuesday Sept 16, 4:10 pm.
Tuesday Sept 23, 4:10 pm.
Tuesday Sept 30, 4:10 pm.
Tuesday Oct 7, 4:10 pm.
Tuesday Oct 14, 4:10 pm.
Tuesday Nov 18, 4:10 pm.
Tuesday Nov 25, 4:10 pm.

For more information visit www.chidalgo.com/teaching.html or email cesar_hidalgo@ksg.harvard.edu