# COMM-290-920: Introduction to Network Analysis

Instructors: Tian Yang & Alvin Zhou

Time: T/TR 1:15pm - 5:05pm

## Course plan:

This introductory course is designed to bring you the necessary knowledge and techniques to understand, analyze, interpret, and visualize networks. Lectures will cover major theories and models in the field of network analysis, while in-class labs will teach you how to use software to analyze real-world network data. No previous coding or statistics knowledge is required.

## Course Structure:

The course will be a hybrid of asynchronous and synchronous instruction, consisting of three parts for each class: An asynchronous presentation, where instructors lecture basic network theories and concepts; A synchronous discussion, where we discuss textbook readings and selected students present optional readings; An asynchronous step-by-step video instruction on how to use the Gephi software to conduct network analysis. Each week after the Thursday lecture, students will finish one assignment, totaling four assignments throughout the summer.

## Assessment:

- Participation and attendance (15%)
- Student-led presentation and discussion (10%)
- Four weekly assignments (20%)
- Final exam (25%)
- Research project (25% written + 5% presentation)

## Learning Objectives:

The course will teach students how to collect and manage network data, and how to analyze that data using measures of centrality, popularity, clustering, etc. The goal of this course is to provide them with basic knowledge of network methods and theories, and allow students to familiarize themselves with network analysis software. By the end of the course, they should be able to apply network thinking to everyday social phenomena.

## Course Materials:

- Borgatti, S. P., Everett, M. G., & Johnson, J. C. (2013). Analyzing Social Networks. London: Sage. (Available from Penn Digital Library)
- Kadushin, C. (2012). Understanding social networks: theories, concepts, and findings. Oxford University Press. (Available from Penn Digital Library)
- Newman, M. (2018). Networks. Oxford University Press. (Available from Penn Digital Library)