

Calendar - Fall2021

Course CSCI-6250/4250 4cr: Frontier of Network Science

The list of class of topics: red are lectures based on textbook, green are the current research lectures, green highlighted in yellow are guest lectures, and blue are research presentations by students.

Aug. 30: L01 Overview and Introduction to Network Science/Graph Theory (chapter 1)

Sept. 02: L02 Introduction II (chapter 1)

Sept. 07: L03 Graph Theory (chapter 2) topics for student presentations;

Sept. 09: L04 Graph Theory II (chapter 2)

Sept. 13: L05 Random Networks (chapter 3)

Sept 16: **Research topic selections by graduates due**

Sept. 16: L06 Scale Free Networks (chapter 4); Research: U.S. Senate Communities;
U.S. Congress Polarization

Sept. 20: L07 Research: U.S. Congress Polarization II; Scale Free Networks II (chapter 4)

Sept. 23: L08 Introduction to Gephi + Examples; Polarization of US elections, James Flamino, Phys
Homework out

Sept. 27: L09 Q&A session for H1; Scale Free Networks III (chapters 4);

Sept. 30; **Undergraduates register their networks before noon**

Sept. 30: L10 Barabasi-Albert Model (chapter 5);

Oct. 04: L11 Research plans presentations by grads: I. Kang, V. Sadashivaiah, N. Agu, M. Mandulak;

Oct. 07: L12 Research plans presentations by grads: M. Crotty, X. Ning, K. Liu, B. Varici, K. Bahandri;

Oct. 14: L13 Research plans presentation by grads: D. Hu, M. Atique, P. Ly, K. Rook, S. Dutta;

Oct. 18: **Homework 1 due by email before noon**

Oct. 18: L14 Barabasi-Albert Model II (chapter 5); Research: Extended SIR Model, Omar Malik, Physics

Oct. 21: L15 Research: Randomized Network Generator, Amr Elsisy, CA; Polarization in US, Mon Ma, CS

Oct. 25 **Undergrads: Research paper selections due before class: Grads: Plan write up due 11:59pm**

Oct. 25: L16 Degree Correlation (chapter 7, part I);

Research: Social Simulations, Aamir Mandviwalla CS

Oct. 28: L17 Discussion of Homework 1 solutions; Degree Correlation (chapter 7, part II);

Nov.01: L18 Presentations of Undergraduate plans: E. Blankenship, S. Trempel, S. Francis, M. Khodak,
C. Maria, S. Ungard, H. Chen

Nov. 04: L19 Presentations of Undergraduate plans: L. Knuckey, S. Bhamidipati, S. Ravindrababu

Research: Noise-induced resilience restoration of ecological systems, Cheng Ma, Physics;

Research: Global Risk Networks;

Nov. 08: L20 V. Sadashivaiah Presentation; Research: Control of Global Risk Networks

Nov. 11: L21 N. Agu, B. Varici Presentations

Nov. 15: L22 Adaptive Multiscale Community Detection, Brendan Cross, CS; K. Bhandri Presentation

Nov. 18: L23 M. Atique, + Undergrad S. Bhamidipati Presentation; Transferable Learning of Continuous
Tie Strengths from Behavior, James Flamino, Phys

Nov. 22: L24 S. Dutta, I. Kang + Undergrad E. Blankenship Presentations

Nov. 29: L25 M. Mandulak + Undergrad Z. Yu Presentations

Dec. 02: L26 M. Crotty + Undergrads S. Francis, M. Khodak Presentations

Dec. 06: L27 D. Hu + 3 Undergrads C. Maria, S. Ravindrababu, X. Ning Presentations

Dec. 09: L28 K. Rook + 4 Undergrads S. Ungard, H. Chen, S. Trempel, K. Liu Presentations