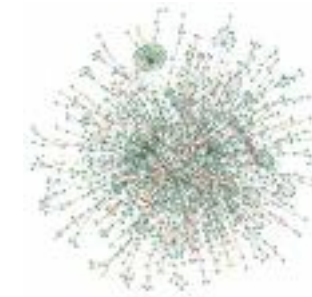
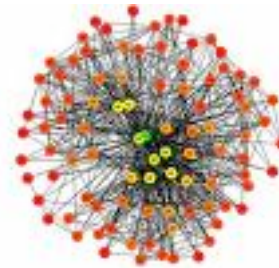
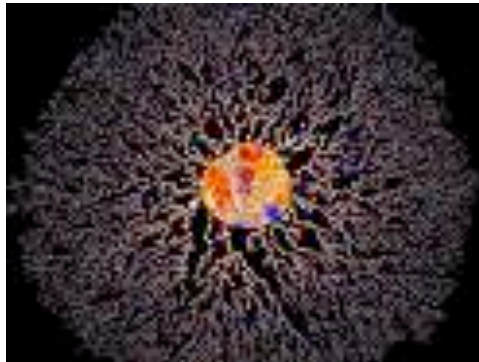


COMP 572/BIOS 572/BIOE 564 BIOINFORMATICS: NETWORK ANALYSIS

[HTTP://WWW.CS.RICE.EDU/~NAKHLEH/COMP572/](http://www.cs.rice.edu/~nakhleh/COMP572/)



Staff

Instructor	Luay Nakhleh	(713)348-3959	nakhleh@cs.rice.edu	DH 3119
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Course Information

Meeting Place and Time	KH 107, Tuesday and Thursday, 2:30-3:50
Textbook	1. "Biological Networks", F. Kepes (Editor), World Scientific Publishing, 2008. 2. "Protein-protein Interactions and Networks", A. Panchenko and T. Przytycka (Editors), Springer, 2008.
Grading	Homework assignments: 50% Project: 50%
Students with disability	Any student with a documented disability needing academic adjustments or accommodations is requested to speak with me during the first two weeks of class. All discussions will remain confidential. Students with disabilities will need to also contact Disability Support Services in the Ley Student Center.

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Schedule of Topics

Date	Main Topic	Specific Topics	Notes
8/25/09	Introductory Material	Administrivia and basics of cell biology	
8/27/09		Review of topics from biological sequence analysis	
9/1/09		Overview of graphs, probability, and hypothesis testing	
9/3/09		Overview of Petri nets and Bayesian networks	
9/8/09	Network Structure	Graph-theoretic properties	
9/10/09		Graph-theoretic properties	
9/15/09		Network motifs	
9/17/09		Modularity and community detection	
9/22/09		Network robustness	
9/24/09	Network "Dynamics"	From networks to systems of ODEs	
9/29/09		Boolean networks: Analysis of regulatory networks	
10/1/09		Petri nets: Analysis of signaling networks	
10/6/09		Bayesian networks: Modeling of regulatory networks	
10/8/09		Flux balance analysis: Analysis of metabolic networks	
10/13/09		MIDTERM RECESS	
10/15/09	Networks in the light of Evolution	Models of network evolution	
10/20/09		Models of network evolution	
10/22/09		Network alignment	
10/27/09		Network alignment	
10/29/09		Evolutionary inference of networks	
11/3/09		Evolutionary inference of networks	
11/5/09	Other Types of Networks	Ecological networks	
11/10/09		Ecological networks	
11/12/09		Phylogenetic networks	
11/17/09		Phylogenetic networks	
11/19/09	Student Presentations		
11/24/09			
11/26/09		THANKSGIVING	
12/1/09	Student Presentations		
12/3/09			