

**Course Schedule and Readings: Physics 250 Econophysics****Required Texts:**

R. Mantegna and H.E. Stanley, *An Introduction to Econophysics*, Cambridge (2000)

D. Stauffer and A.Aharony, *Introduction to Percolation*, CRC Press (1991)

P.R. Bevington and D.K. Robinson, *Data Reduction and Error Analysis for the Physical Sciences*, McGraw-Hill (1992)

**Optional and Other Reading:**

Paul Krugman, *End This Depression Now*, W.W. Norton (2012); also *The Return of Depression Economics*, W.W. Norton (2009)

Michael Lewis, *The Big Short*, W.W. Norton (2010); also, *Liars Poker*, W.W. Norton (1989)

Nassim Nicholas Taleb, *The Black Swan*, Random House (2010)

William Poundstone, *Fortune's Formula*, Hill and Wang (2005)

Justin Fox, *The Myth of the Rational Market*, HarperCollins (2009)

Mebane Faber and Eric Richardson, *The Ivy Portfolio*, John Wiley (2009)

Burton Makiel, *A Random Walk Down Wall Street*, W.W. Norton (2007)

Benoit Mandelbrot and Richard L Hudson, *The Misbehavior of Markets, A Fractal View of Financial Turbulence*, Basic Books (2007)

Michael Mauboussin, *The Success Equation: Untangling Skill and Luck in Business, Sports and Investing*, Harvard Business Review Press (2012)

Scott Patterson, *The Quants*, Crown Business Press (2011); also *Dark Pools*, Crown Business Press (2012)

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Please note that homework can be turned into Professor Rundle either in class, or at his office in 534B Physics-Geology by 5:00 pm on the due date.

Week	Reading (Topic)	Reading Assignment Chapter/Section	Projects	Project Due Date
1 January 7	Introduction to Econophysics	Mantegna and Stanley Chapters 1&2  <a href="#">Power Laws</a> <a href="#">Santa Fe Institute Morgan Stanley Meeting</a>	<a href="#">Project 1: Returns and Drawdowns</a>	Friday Jan 18
2 January 14	Scaling in models	Stauffer and Aharony Chapter 1-2  For culture, see:  <a href="#">Stauffer and Penna (1998)</a>  <a href="#">Cont and</a>		

		<a href="#"><u>Bouchaud (2000)</u></a> <a href="#"><u>Another Simple Model</u></a>		
3 January 21 Holiday Jan 21 (Martin Luther King)	Cluster analysis and probability	Stauffer and Aharony Chapter 1-2		
4 January 28	Correlations and scaling	Stauffer and Aharony Chapter 3		
5 February 4	Statistics and Distributions	Bevington-Robinson Chapter 1-2		
6 February 11	Stochastic Processes - I	Mantegna and Stanley Chapter 3-4		
7 February 18 Holiday Feb 18 (President's Day)	Stochastic Processes - II	Mantegna and Stanley Chapter 4-5		
8 February 25	Statistics of Stationarity, Autocorrelation, Cross-correlation	Mantegna and Stanley Chapter 6-7		
9 March 4	Price dynamics and scaling	Mantegna and Stanley Chapter 8-9		
10 March 11	Correlations and Anticorrelations in Stock Prices	Mantegna and Stanley Chapter 11-12		
11 March 18	Options	Mantegna and Stanley Chapter 14-15		
12 March YY	Final exam period- last day to turn in homeworks and projects			

**Please hand in all outstanding work by (TBD)**