Class Schedule

Week	Topic	Readings
5/22	Introduction to the course Introduction to Python Capital Allocation to Risky Assets (cont)	Bodie 6
5/24	Capital Allocation to Risky Assets (cont) Introduction to credit risk	Bodie, 6, 14.4 (or 14.5 for Bodie, 12 edition)
5/31	Efficient Diversification: Markowitz model Index Models	Bodie, 7, 8
6/2	The Capital Asset Pricing Model Arbitrage Pricing Theory and Multifactor Models of Risk and Return	Bodie, 9, 10
6/5	**Case: Innovating into Active ETFs** Empirical asset pricing and machine learning	*1
6/7	Company valuations	Bodie, 18
6/12	Momentum Funds: **Case: AQR Momentum Funds A**	
6/14	Lasso and Ridge Regression Polynomial Regression, Step Functions and Splines	ISLR, 6.2, 7.1-7.4
6/21	Natural language processing: Extracting information and investment signals Neural Networks and Deep Learning	MRS, 6.2-6.4.3, 13-15 *2, *3 ISLR, 10
6/23	Portfolio Performance Evaluation Black Litterman model Investment Policy Clustering analysis & Portfolio optimization Company valuations: **Case: Valuing Walmart 2010**	Bodie, 24, 27.3, 27.4, 28.1, 28.4 *4, *5 ISLR, 12.4
6/26	**Case: AQR's Delta strategy** Microstructure and high-frequency finance Technical analysis and algorithmic trading Feature importance, model calibration & backtesting Financial data structures and cross-validation	*6, *7, *8
6/28	Cryptocurrencies and blockchain Final exam	

Bodie, Kane and Marcus, Investments, 13th Edition, McGraw-Hill.
ISLR: Introduction to Statistical Learning with Applications in R (link)
MRS: Manning, Raghavan and Schutze, *Introduction to Information Retrieval*
*1: S. Gu, B. Kelly, D. Xiu, Empirical Asset Pricing via MachineLearning, The Review of Financial Studies 33 (2020): 2223–2273.
https://dachxiu.chicagobooth.edu/download/ML.pdf
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2668919
*2: Lauren Cohen, Christopher Malloy & Quoc Nguyen, Lazy Prices, NBER paper # 25084, 2019. https://www.nber.org/papers/w25084

*3: Eisdorfer, Assaf and Froot, Kenneth and Ozik, Gideon and Sadka, Ronnie, Competition Links and Stock Returns 2019. https://ssrn.com/abstract=3469642
*4: G. Creamer (2015). "Can a Corporate Network and News Sentiment Improve Portfolio Optimization Using the Black Litterman Model?" Quantitative Finance 15 (8): 1405-1416. https://ssrn.com/abstract=2668919
*5: Marco Lopez de Prado, Building Diversified Portfolios that Outperform Out-of-Sample Journal of Portfolio Management, 2016
https://jpm.pm-research.com/content/42/4/59
*6: G. Creamer and Y. Freund (2007). "A Boosting Approach for Automated Trading." Journal of Trading 2 (3): 84-96.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=938042
*7: Johnson, chapter 1, Algorithmic Trading and DMA: An introduction to direct access trading strategies http://www.mediafire.com/file/kxa9gve6fxccbg6/algo-dma_preview.pdf
*8: G. Creamer (2012). "Model Calibration and Automated Trading Agent for Euro Futures." Quantitative Finance 12 (4): 531-545.