

C&O 778 Course Outline, Winter, 2010 ACTSC 973
Portfolio Optimization

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(under Winter 2010 Course Pages)

office hours: tba

- basic optimization: quadratic minimization subject to linear equality constraints
- efficient portfolios: the efficient frontier, the capital market line, Sharpe ratios the Security Market Line and threshold returns
- practical portfolio optimization: short sales restrictions, target portfolios, transactions costs
- quadratic programming theory, a quadratic programming solution algorithm
- generalization of the efficient frontier, Capital Market Line, Security Market Line and Sharpe ratios to problems with linear inequality constraints. These are the problems that practitioners demand to be solved.
- determination of the entire efficient frontier under linear inequality constraints
- "kink" points on the efficient frontier and their implication to implied risk free returns

Course notes by the instructor will be made available. These will be published by Taylor and Francis with an anticipated publication date of March, 2010. An additional reference is the classic Harry M. Markowitz, Portfolio Selection: Efficient Diversification of Investments, Second Edition, Blackwell Publishers Ltd., Cambridge, 1991.

Meet Time: MC 2018A, 10:30 - 11:20am, MWF.

Note: This course has been attended by students from the Departments of Combinatorics and Optimization, Actuarial Science and Statistics, Applied Math, Systems Design, Management Sciences and The Master's Programme in Finance.