



Risk management and financial decision theory with applications



Guest lecturer:

Enrico Moretto

*Università degli Studi
dell'Insubria*

Course schedule

Day	Time	Room	Lecture theme
Thursday, March 5, 2020	14:00 – 15:30 15:40 – 17:10	410	Introduction to risk management and financial decision theory: how to measure return and risk. Mean-variance (Markowitz, 1959) approach. Optimal portfolios as a constrained non-linear programming problem
Friday, March 6, 2020	14:00 – 15:30 15:40 – 17:10	410	Choice under uncertainty: the expected utility approach. Extensions to the mean-variance portfolio problem: Capital Asset Pricing Model (CAPM - Sharpe, 1964); the risk parity model
Thursday, March 12, 2020	14:00 – 15:30 15:40 – 17:10	410	Topics in Risk Management: duration and convexity gap; asset-liabilities management; structural models (Merton 1974, Leland 1994)
Friday, March 13, 2020	14:00 – 15:30 15:40 – 17:10	410	Theory of Coherent Risk Measures: Value-at-Risk and Expected Shortfall with examples
Thursday, March 19, 2020	14:00 – 15:30 15:40 – 17:10	410	An introduction to simulation in Risk Management: Monte Carlo simulation applied to portfolio management
Friday, March 20, 2020	14:00 – 15:30 15:40 – 17:10	410	Term structure models (Vasicek, 1997 and Cox, Ingersoll, and Ross 1985) and their applications to Risk Management

All topics will be covered under both a theoretical and an applied side using software such as Excel and R and websites as www.portfoliovisualizer.com

Enrico Moretto's research and publications (selection):

- ✓ Stefani, S., Moretto, E., Parravicini, M., Cambiagli, S., Sonubi, A., Kutrolli, G. & Tulli, V. (2018) Managing adverse temperature conditions through hybrid financial instruments. *Journal of Energy Markets*, 11(3), 25-41
- ✓ Moretto, E., Pasquali, S., & Trivellato, B. (2016). Option pricing under deformed Gaussian distributions. *Physica A: Statistical Mechanics and its Applications*, 446, 246-263.
- ✓ Agosto, A., & Moretto, E. (2015). Variance matters (in stochastic dividend discount models). *Annals of Finance*, 11(2), 283-295.
- ✓ Bonacina, F., D'Errico, M., Moretto, E., Stefani, S., Torriero, A., & Zambruno, G. (2015). A multiple network approach to corporate governance. *Quality & Quantity*, 49(4), 1585-1595.
- ✓ D'Ippoliti, F., Moretto, E., Pasquali, S., & Trivellato, B. (2010). Exact and approximated option pricing in a stochastic volatility jump-diffusion model. In *Mathematical and statistical methods for actuarial sciences and finance*, Springer.
- ✓ Moretto, E., Pasquali, S., & Trivellato, B. (2005). An alternative model for evaluating exchange rate derivatives with stochastic volatility. *Insurance Mathematics & Economics*, 37(2), 390-391

Course registration at <https://forms.gle/yqQMSEBJgPXiMydC9> (no later than March 2)