Possible Tracks within Elective Courses - for Orientation

The table below should be understood as an indication only to help MSc QF students to set individual focus points in their curriculum.

The table contains examples of elective courses in the Master of Science UZH ETH in Quantitative Finance.

The list is not exhaustive, courses might change from term to term, and new courses might be developed / offered and might not yet be in the table. The table will be updated periodically. If you find a particular course, which is part of the MSc QF curriculum and not in the list, and are not sure where it would belong, please contact chantal.spale@bf.uzh.ch.

Abbreviations:

- MF: course from area “Mathematical Methods in Finance”
- FIN: course from area “Finance”

Please look at the table below

FALL SEMESTER

Track 1 **Machine Learning, AI and Data in Finance**	**Track 2** **Uncertainty and Risk Management**	**Track 3** **Mathematical Topics in Finance**	**Track 4** **Banking and Corporate Finance**	**Track 5** **Insurance**	**Track 6** **Portfolio Management and Asset Pricing**
Fall Semester	*Fall Semester*	*Fall Semester*	*Fall Semester*	*Fall Semester*	*Fall Semester*
Data Analytics in Organizations and Business (ETH, FIN, Fall)	Asset Liability Management and Treasury Risks (ETH, FIN, Fall)	Numerical Analysis of Stochastic Ordinary Differential Equations (ETH, MF, Fall)	Bank Treasury Management (UZH, FIN, Fall)	Life Insurance Mathematics (ETH, MF, Fall)	Portfolio Management Implementation I (UZH, FIN, Fall)
Digital Tools for Finance (UZH, FIN, Fall)	Counterparty Credit Risk Management (UZH, FIN, Fall)	Mathematical Finance (ETH, MF, Fall)	CFA Investment Challenge (UZH, FIN, Fall)	Microeconomics of Insurance (UZH, FIN, Fall)	Portfolio Management Theory I (UZH, FIN, Fall)
	Matlab for Portfolio Management (UZH, FIN, Fall)	Seminar in Computational Finance for CSE (ETH, MF, Fall)	Advanced CFA Investment Challenge (UZH, FIN, Fall)	Reinsurance Analytics (ETH, MF, Fall) not in fall 2022!	
Foundations of Data Science (UZH, MF, Fall)			Corporate Finance (PhD Course) (UZH, FIN, Fall)		
			Environmental and financial sustainability (UZH, FIN, Fall)		
			Seminar Corporate Governance (UZH, FIN, Fall)		
			Interdisziplinäres Seminar Mergers and Acquisitions (UZH, Fin, Fall)		

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Fall Semester	*Fall Semester*	*Fall Semester*	*Fall Semester*	*Fall Semester*	*Fall Semester*
Courses in 2 tracks	*Courses in 2 tracks*	*Courses in 2 tracks*	*Courses in 2 tracks*	*Courses in 2 tracks*	*Courses in 2 tracks*
Applied Financial Analytics for Strategic Decisions and Value Creation (UZH, FIN, Fall)			Applied Financial Analytics for Strategic Decisions and Value Creation (UZH, FIN, Fall)		
Quantitative Asset Management (UZH, FIN, Fall)					Quantitative Asset Management (UZH, Fin, Fall)
				Financial Risk Management (ETH, MF, Fall)	Financial Risk Management (ETH, MF, Fall)
	Stress Testing of Banks (UZH, FIN, Fall)		Stress Testing of Banks (UZH, FIN, Fall)		
	The Economy of Risk in Insurance (UZH, MF, Fall)			The Economy of Risk in Insurance (UZH, MF, Fall)	
			Investment Process in Practice – Fundamentals and Applications (UZH, FIN, Fall)		Investment Process in Practice - Fundamentals and Applications (UZH, FIN, Fall)
	Topics of Applied Risk Management (UZH, MF, Fall)		Topics of Applied Risk Management (UZH, FM, Fall)		

SPRING SEMESTER

Track 1 Machine Learning, AI and Data in Finance	**Track 2 Uncertainty and Risk Management**	**Track 3 Mathematical Topics in Finance**	**Track 4 Banking and Corporate Finance**	**Track 5 Insurance**	**Track 6 Portfolio Management and Asset Pricing**
Spring Semester	*Spring Semester*	*Spring Semester*	*Spring Semester*	*Spring Semester*	*Spring Semester*
Introduction to Machine Learning (ETH, MF, Spring)	Introduction to Operations Research: Stochastic Models (UZH, MF, Spring)	Brownian Motion and Stochastic Calculus (ETH, MF, Spring)	Advanced Valuation (UZH, FIN, Spring)		Economic Theory of Financial Markets (ETH, FIN, Spring) (does not take place in spring 2024!)
Decentralized Finance (ETH, MF, Spring)	Introduction to Risk Modelling (ETH, MF, Spring)	Continuous Time Quantitative Finance (UZH, MF, Spring)	Advanced Corporate Finance II (UZH, FIN, Spring)	Stochastic Loss Reserving Methods (ETH, MF, Spring)	Investments – Selected Quantitative Tools (UZH, MF, Spring)
			Advanced Banking (UZH, FIN, Spring)		
		Topics in Mathematical Finance (ETH,MF, only spring 2024)	Corporate Risk and Resilience (UZH, FIN, Spring)		Portfolio Management Implementation II (UZH, FIN, Spring)
	The Risk and Finance Lab (UZH, FIN, Spring)		Applied Credit Risk Modelling (UZH, Fin, Spring)		Portfolio Management Theory II (UZH, FIN, Spring)
			Theory of Financial Intermediation and Banking (UZH, Fin, Spring)		Quantitative Asset Management & Systematic Investing (UZH, MF, Spring)

Track 1 **Machine Learning, AI and Data in Finance**	**Track 2** **Uncertainty and Risk Management**	**Track 3** **Mathematical Topics in Finance**	**Track 4** **Banking and Corporate Finance**	**Track 5** **Insurance**	**Track 6** **Portfolio Management and Asset Pricing**
			Takeovers, Restructuring and Corporate Governance (UZH, Fin, Spring)		
			Market Microstructure (UZH, Fin, Spring)		Asset Pricing (UZH, Fin, Spring, doctoral course)
Spring Semester	*Spring Semester*	*Spring Semester*	*Spring Semester*	*Spring Semester*	*Spring Semester*
Courses in 2 tracks	*Courses in 2 tracks*	*Courses in 2 tracks*	*Courses in 2 tracks*	*Courses in 2 tracks*	*Courses in 2 tracks*
		Market-Consistent Actuarial Valuation (ETH, MF, Spring)			Market-Consistent Actuarial Valuation (ETH, MF, Spring)
			Sentiment Analytics (UZH, FIN, Spring)		Sentiment Analytics (UZH, FIN, Spring)
Data Analytics for Non-Life Insurance Pricing (ETH, MF, Spring)				Data Analytics for Non-Life Insurance Pricing (ETH, MF, Spring)	
Crunchpoints in seriously large banking/payment-IT-projects (UZH, FIN, Spring)			Crunchpoints in seriously large banking/payment-IT-projects (UZH, FIN, Spring)		
Time Series Analysis (UZH, MF, Spring)	Time Series Analysis (UZH, MF, Spring)				

		Derivatives Portfolio Valuation (UZH, MF, Spring)			Derivatives Portfolio Valuation (UZH, MF, Spring)
	Reinsurance Analytics (ETH, MF, Spring)			Reinsurance Analytics (ETH, MF, Spring)	
			Sustainable Investing (UZH, Fin, Spring)		Sustainable Investing (UZH, Fin, Spring)