The Quantitative Finance Curriculum

| Module Level | Major Requirements | Cumulative Major MCs | | |
|-----------------|---|-------------------------|--|--|
| Level- | ACC1002 Financial Accounting | 24 | | |
| 1000 | CS1010S/CS1010/CS1010E Programming Methodology | | | |
| | CS1020/CS1020E Data Structures and Algorithms I | | | |
| | MA1101R Linear Algebra I | | | |
| | MA1102R Calculus | | | |
| | MA1104 Multivariable Calculus | | | |
| Level- | FIN2004 Finance | 44 - 46 | | |
| 2000 | MA2213 Numerical Analysis I | | | |
| | MA2216/ST2131 Probability | | | |
| | MA2101/MA2101S Linear Algebra II | | | |
| | MA2108/MA2108S Mathematical Analysis | | | |
| Level- | QF3101 Investment Instruments: | 72 - 74 | | |
| 3000 | Theory and Computation | | | |
| | MA3269 Mathematical Finance I | | | |
| | ST3131 Regression Analysis | | | |
| | 2 modules from the following | | | |
| | CS3230 Design and Analysis of Algorithm | | | |
| | MA3220 Ordinary Differential Equations | | | |
| | MA3236 Nonlinear Programming | | | |
| | MA3252 Linear and Network Optimisation | | | |
| | MA3264 Mathematical Modelling | | | |

| Module Level | Major Requirements | Cumulative Major MCs | | | | | |
|-----------------|--|-------------------------|--|--|--|--|--|
| Level- | 2 modules from the following | | | | | | |
| 3000 | FIN3101 Corporate Finance | | | | | | |
| Cont'd | FIN3103 Financial Markets | | | | | | |
| | FIN3117 Bank Management | | | | | | |
| | FIN3118 Financial Risk Management | | | | | | |
| Level- | • QF4199 Honours Project in Quantitative Finance | | | | | | |
| 4000 | QF4102 Financial Modelling | | | | | | |
| & above | MA4269 Mathematical Finance II | | | | | | |
| | 3 modules from the following | | | | | | |
| | o QF5210 Financial Time Series: Theory and Computation | | | | | | |
| | FIN4111 Research Methods in Finance | | | | | | |
| | o FIN4112 Seminar in Finance | | | | | | |
| | MA4254 Discrete Optimisation | | | | | | |
| | MA4255 Numerical Partial Differential Equations | | | | | | |
| | MA4260 Stochastic Operations Research | | | | | | |
| | o MA4264 Game Theory | | | | | | |
| | MA4267 Discrete Time Finance | | | | | | |
| | ST4233 Linear Model | | | | | | |
| | ST4245 Statistical Methods for Finance | | | | | | |
| | MA5245 Advanced Financial Mathematics | | | | | | |
| | MA5248 Stochastic Analysis in Mathematical Finance | | | | | | |

Selected focuses - Technical skills

| ST3131 Regression Analysis | | S Line | T4233 ar Models | | ST4233 de regression ST4245 de | als with a analysis eals with a | idvanced inalysis |
|--|-----|------------------|-------------------------------------|---------------------|---|-------------------------------------|----------------------------------|
| QF3101 Investment Instruments | OR | S Sta Meth | T4245 atistical ods in Fin | | of financia | al models. | |
| These modules equips skills to solve optimization problems | | | MA325 Linear & Optimiza | 52 : NW ation | MA4254 Discrete Optimization Modelling Modelling Modelling | | These modules focuses greatly |
| | | | MA3236 Non-linear Programming | | MA4260 Stochastic Operations Re. | QF3101 Investment Instruments | and numerical methods. |
| problem | 15. | | MA322 Ordina Differenti | 20 iry ial Eq | MA4255 Numerical Meth. in DE | | |

Selected focuses - Finance modules

•In general, finance modules focuses on how the finance industry and system works. •FIN3101: Corporate Finance • Valuation, Capital Structure & Budgeting, Mergers and Acquisitions •FIN3103: Financial Markets and Institutions • Central banks, other forms of financial instit. •FIN3102 (not core), but helps to do CFA lvl 1

Sample Study Plan

Year 1 Sem 1:

ACC1002X Financial Accounting CS1010S Programming Methodology MA1101R Linear Algebra I MA1102R Calculus

/ear 1 Sem 2:

CS1020 Data Structures and Algorithms I MA1104 Multivariable Calculus FIN2004X Finance MA2216 Probability

Year 2 Sem 1:

MA2108 Mathematical Analysis I MA2213 Numerical Analysis I MA3269 Mathematical Finance I

Year 2 Sem 2:

ST3131 Regression Analysis QF3101 Investment Instruments FIN3101 Corporate Finance

Year 4 Sem 1:

MA4269 Mathematical Finance II QF4102 Financial Modelling Level 4000 Elective QF Final Year Project

Year 4 Sem 2:

Level 4000 Elective QF Final Year Project

Year 3 Sem 1: SEP mapping MA3000 Elective Level 4000 Elective (FIN3000 Elective)

Year 3 Sem 2

MA3000 Elective (MA2101 Linear Algebra II)