

Quantitative Finance and Risk Management Science
Applicable to students admitted in 2019-20

Major Programme Requirement

Students are required to complete a minimum of 84 units of courses as follows:

| | Units |
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| 1. Faculty Package: MATH1010, DOTE[DSME]1030, 1040 | 9 |
| 2. Required Courses: | 48 |
| (a) FINA3010, 3080, 3210, MATH1030, 2010#, RMSC2001, 4001, 4003, STAT2001#, 2006#, 3007#, 3008# | |
| (b) ACCT1111 or 2111 | |
| (c) CSCI1510 or 1520 or 1530 or 1540 or 1550 or 1580 | |
| (d) CSCI2100# or 2520# or DOTE[DSME]2051# or SEEM3550# | |
| (e) FINA2010 or 2110 | |
| 3. Elective Courses: | 27 |
| (a) Business (choose at least 6 units of courses from the following list, but no more than six 1-unit courses): ACCT2121, 2151 or 3151#, 4212# or 4213# or 4214#, 4251#, FINA2210, 3020, 3030, 3040, 3060, 3070, 3090, 3110, 3230, 3240, 3280, 3310, 3320, 3330, 3340, 3350, 3360, 3370, 3398, 3399, 3420, 4010, 4020, 4030, 4040, 4050, 4060, 4230, 4240, 4310, 4320, 4330, 4340, 4350, 4400, 4410, IBBA3040, MGNT1020, 2511, 2512, 2611, 4010#, MKTG2010# | |
| (b) Quantitative Finance (choose at least 9 units of courses from the following list): FINA4110, 4120, 4150, 4160, 4370, 4420 | |
| (c) Risk Management Science (choose at least 9 units of courses from the following list): ECON3420#, MATH3215#, 3230#, 3240#, 4210#, RMSC4002, 4004, 4005, 4007, STAT4002#, 4003#, 4004#, 4005#, 4006#, 4008#, 4010#, 4012# | |
| (d) Capstone/Research (choose at least 3 units of courses from the following list): FINA4130, 4140, 4190, 4380, 4390, 4430, 6232, 6242, 6252, RMSC4102, 4202 | |

Total: 84

Explanatory Notes:

1. FINA and RMSC courses at 2000 and above level as well as those labeled as # will be included in the calculation of Major GPA for honours classification.
2. JUPAS admittees without HKDSE Mathematics Extended Modules I or II are required to take a preparatory Mathematics course MATH1530 before taking MATH1010, except those who pass the Mathematics Placement Test arranged by the Programme.
3. Subject to the approval of the major programme, students who have completed the Co-operative Education Programme are deemed to have fulfilled the capstone requirement FINA4390.

[] Subject area code “DSME” changed to “DOTE” with effect from 2024-25.

| | Recommended Course Pattern | Units |
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| First Year of Attendance | 1 st term Faculty Package: DOTE[DSME]1030, MATH1010 Major Required: ACCT1111 or 2111 Major Elective(s): | 6 3 |
| | 2 nd term Faculty Package: DOTE[DSME]1040 Major Required: FINA2010 or 2110, MATH1030 Major Elective(s): | 3 6 |
| Second Year of Attendance | 1 st term Major Required: CSCI1510 or 1520 or 1530 or 1540 or 1550 or 1580, MATH2010, RMSC2001, STAT2001 Major Elective(s): | 12 |
| | 2 nd term Major Required: CSCI2100 or 2520 or DOTE[DSME]2051 or SEEM3550, FINA3010, 3080, STAT2006 Major Elective(s): | 12 |
| Third Year of Attendance | 1 st term Major Required: FINA3210, RMSC4003, STAT3007 Major Elective(s): 6 units from Business, Quantitative Finance, and Risk Management Science electives | 9 6 |
| | 2 nd term Major Required: RMSC4001, STAT3008 Major Elective(s): 9 units from Business, Quantitative Finance, and Risk Management Science electives | 6 9 |
| Fourth Year of Attendance | 1 st term Major Required: Major Elective(s): 9 units from Quantitative Finance and Risk Management Science electives | 9 |
| | 2 nd term Major Required: Major Elective(s): 3 units from Capstone/Research electives | 3 |
| Total (including Faculty Package): | | 84 |

| Course List | | |
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| <i>Course Code</i> | <i>Course Title</i> | <i>Unit(s)</i> |
| Required Courses | | |
| ACCT1111 | Foundations in Financial Accounting | 3 |
| ACCT2111 | Introductory Financial Accounting | 3 |
| CSCI1510 | Computer Principles and C Programming | 3 |
| CSCI1520 | Computer Principles and C++ Programming | 3 |
| CSCI1530 | Computer Principles and Java Programming | 3 |
| CSCI1540 | Fundamental Computing with C++ | 3 |
| CSCI1550 | Computer Principles and Python Programming | 3 |
| CSCI1580 | Visual Programming | 3 |
| CSCI2100 | Data Structures | 3 |
| CSCI2520 | Data Structures and Applications | 3 |
| DOTÉ[DSME]1030 | Economics for Business Studies I | 3 |
| DOTÉ[DSME]1040 | Economics for Business Studies II | 3 |

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| DOTE[DSME]2051 | Business Information Systems | 3 |
| FINA2010 | Financial Management | 3 |
| FINA2110 | Financial Management: Foundations and Analysis | 3 |
| FINA3010 | Financial Markets | 3 |
| FINA3080 | Investment Analysis and Portfolio Management | 3 |
| FINA3210 | Risk Management and Insurance | 3 |
| MATH1010 | University Mathematics | 3 |
| MATH1030 | Linear Algebra I | 3 |
| MATH2010 | Advanced Calculus I | 3 |
| RMSC2001 | Introduction to Risk Management | 3 |
| RMSC4001 | Simulation Methods for Risk Management Science and Finance | 3 |
| RMSC4003 | Statistical Modelling in Financial Markets | 3 |
| SEEM3550 | Fundamentals in Information Systems | 3 |
| STAT2001 | Basic Concepts in Statistics and Probability I | 3 |
| STAT2006 | Basic Concepts in Statistics and Probability II | 3 |
| STAT3007 | Introduction to Stochastic Processes | 3 |
| STAT3008 | Applied Regression Analysis | 3 |
| Elective Courses | | |
| Electives 3(a) | | |
| ACCT2121 | Introductory Management Accounting | 3 |
| ACCT2151 | Legal Environment for Business | 2 |
| ACCT3151 | Business Law | 3 |
| ACCT4212 | China Business Valuation and Analysis | 3 |
| ACCT4213 | Financial Statement Analysis and Valuation | 3 |
| ACCT4214 | Applied Financial Statement Analysis | 3 |
| ACCT4251 | Regulation and Compliance in the Financial Markets | 3 |
| FINA2210 | Interest Theory and Finance | 3 |
| FINA3020 | International Finance | 3 |
| FINA3030 | Management of Financial Institutions | 3 |
| FINA3040 | Central Banking and Regulation of Financial Institutions | 3 |
| FINA3060 | Real Estate Finance and Investment | 3 |
| FINA3070 | Corporate Finance: Theory and Practice | 3 |
| FINA3090 | Understanding China's Financial System | 3 |
| FINA3110 | Issues in Finance | 3 |
| FINA3230 | Life and Health Insurance | 3 |
| FINA3240 | Corporate Property and Liability Insurance | 3 |
| FINA3280 | Insurance Company Operations and Management | 3 |
| FINA3310 | Introduction to Investment Banking | 1 |
| FINA3320 | Introduction to Credit Rating | 1 |
| FINA3330 | Introduction to Alternative Investment | 1 |
| FINA3340 | Trading Strategies: Behavioral and Technical Analysis | 1 |
| FINA3350 | Foreign Exchange Market Practices | 1 |
| FINA3360 | Derivative Warrants, Proprietary and Arbitrage Trading Concepts | 1 |
| FINA3370 | Introduction to Bloomberg and Reuters | 1 |
| FINA3398 | Special Issues in Finance | 1 |
| FINA3399 | Current Issues in Finance | 1 |
| FINA3420 | Credit Rating in Global Economy | 3 |
| FINA4010 | Security Analysis | 3 |
| FINA4020 | Fund Management and Asset Allocation | 3 |
| FINA4030 | Selected Topics in Finance | 3 |
| FINA4040 | Cases in Corporate Finance | 3 |

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| FINA4050 | Mergers And Acquisitions | 3 |
| FINA4060 | China Finance | 3 |
| FINA4230 | Reinsurance and Alternative Risk Transfer | 3 |
| FINA4240 | Employee Benefits, Retirement and Estate Planning | 3 |
| FINA4310 | China Banking and Financial System | 1 |
| FINA4320 | China Equity Securities Market | 1 |
| FINA4330 | China Derivative Securities Market | 1 |
| FINA4340 | Structured Products: Fundamentals and Analysis | 1 |
| FINA4350 | Bond Markets: Analysis and Strategies | 1 |
| FINA4400 | Behavioral Finance | 3 |
| FINA4410 | Current Developments in FinTec | 3 |
| IBBA3040 | Business Lecture Series | 1 |
| MGNT1020 | Management | 3 |
| MGNT2511 | Global Experiential Learning I | 1 |
| MGNT2512 | Global Experiential Learning II | 1 |
| MGNT2611 | Business Sustainability | 2 |
| MGNT4010 | Strategic Management | 3 |
| MKTG2010 | Marketing Management | 3 |
| Electives 3(b) | | |
| FINA4110 | Options and Futures | 3 |
| FINA4120 | Fixed Income Securities Analysis | 3 |
| FINA4150 | Quantitative Methods for Financial Derivatives | 3 |
| FINA4160 | Intermediate Financial Theory | 3 |
| FINA4370 | Derivatives Trading: Analysis and Strategies | 3 |
| FINA4420 | Financial Markets from Macro Perspective | 3 |
| Electives 3(c) | | |
| ECON3420 | Financial Economics | 3 |
| MATH3215 | Operations Research | 3 |
| MATH3230 | Numerical Analysis | 3 |
| MATH3240 | Numerical Methods for Differential Equations | 3 |
| MATH4210 | Financial Mathematics | 3 |
| RMSC4002 | Financial Data Analytics with Machine Learning | 3 |
| RMSC4004 | Theory of Risk and Insurance | 3 |
| RMSC4005 | Stochastic Calculus for Finance and Risk | 3 |
| RMSC4007 | Risk Management with Derivatives Concepts | 3 |
| STAT4002 | Applied Multivariate Analysis | 3 |
| STAT4003 | Statistical Inference | 3 |
| STAT4004 | Actuarial Science | 3 |
| STAT4005 | Time Series | 3 |
| STAT4006 | Categorical Data Analysis | 3 |
| STAT4008 | Survival Modelling | 3 |
| STAT4010 | Bayesian Learning | 3 |
| STAT4012 | Statistical Principles of Deep Learning with Business Applications | 3 |
| Electives 3(d) | | |
| FINA4130 | Empirical Finance | 3 |
| FINA4140 | Computational Finance | 3 |
| FINA4190 | Research Project in Quantitative Finance | 3 |
| FINA4380 | Algorithmic Trading Strategies, Arbitrage and HFT | 3 |
| FINA4390 | Banking and Finance Practicum | 3 |
| FINA4430 | Computerized Trading and Big Data | 3 |
| FINA6232 | Seminar in Asset Pricing | 3 |
| FINA6242 | Seminar in Corporate Finance | 3 |

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| FINA6252 | Empirical Methods in Asset Pricing | 3 |
| RMSC4102 | Research Project | 3 |
| RMSC4202 | Practicum | 3 |