

**Quantitative Finance and Risk Management Science**  
**Applicable to students admitted in 2020-21**

**Major Programme Requirement**

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

	Units
1. Faculty Package: MATH1010, DSME1030, 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 1580	
(d) CSCI2100# or 2520# or DSME2051# 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, 3110, 3230, 3240, 3280, 3310, 3320, 3330, 3340, 3350, 3360, 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	
(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, 6232, 6242, 6252, RMSC4102, 4202	
<b>Total:</b>	<b>84</b>

**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.

	<b>Recommended Course Pattern</b>	Units

<b>First Year of Attendance</b>	1 <sup>st</sup> term Faculty Package: DSME1030, MATH1010 Major Required: ACCT1111 or 2111 Major Elective(s):	6 3
	2 <sup>nd</sup> term Faculty Package: DSME1040 Major Required: FINA2010 or 2110, MATH1030 Major Elective(s):	3 6
<b>Second Year of Attendance</b>	1 <sup>st</sup> term Major Required: CSCI1510 or 1520 or 1530 or 1540 or 1580, MATH2010, RMSC2001, STAT2001 Major Elective(s):	12
	2 <sup>nd</sup> term Major Required: CSCI2100 or 2520 or DSME2051 or SEEM3550, FINA3010, 3080, STAT2006 Major Elective(s):	12
<b>Third Year of Attendance</b>	1 <sup>st</sup> term Major Required: FINA3210, RMSC4003, STAT3007 Major Elective(s): 6 units from Business, Quantitative Finance, and Risk Management Science electives	9 6
	2 <sup>nd</sup> term Major Required: RMSC4001, STAT3008 Major Elective(s): 9 units from Business, Quantitative Finance, and Risk Management Science electives	6 9
<b>Fourth Year of Attendance</b>	1 <sup>st</sup> term Major Required: Major Elective(s): 9 units from Quantitative Finance and Risk Management Science electives	9
	2 <sup>nd</sup> term Major Required: Major Elective(s): 3 units from Capstone/Research electives	3
<b>Total (including Faculty Package):</b>		<b>84</b>

<b>Course List</b>		
<i>Course Code</i>	<i>Course Title</i>	<i>Unit(s)</i>
<b>Required Courses</b>		
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
CSCI1580	Visual Programming	3
CSCI2100	Data Structures	3
CSCI2520	Data Structures and Applications	3
DSME1030	Economics for Business Studies I	3
DSME1040	Economics for Business Studies II	3
DSME2051	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
<b>Elective Courses</b>		
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	Securities Regulation	3
FINA2210	Interest Theory and Finance	3
FINA3020	International Finance	3
FINA3030	Management of Financial Institutions	3
FINA3040	Commercial and Central Banking	3
FINA3060	Real Estate Finance and Investment	3
FINA3070	Corporate Finance: Theory and Practice	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
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
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 FinTech	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
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	Derivatives Trading: Research and Development	3
FINA4390	Banking and Finance Practicum	3
FINA6232	Seminar in Asset Pricing	3
FINA6242	Seminar in Corporate Finance	3
FINA6252	Empirical Methods in Asset Pricing	3
RMSC4102	Research Project	3
RMSC4202	Practicum	3