

**Quantitative Finance**  
**Applicable to students admitted in 2016-17**

**Major Programme Requirement**

Students are required to complete a minimum of 69 units of courses as follows:

	Units
1. Faculty Package: ACCT1111, DSME1030, 1040	9
2. Required Courses:	27
(a) FINA3080, MATH1010, 1030, 2010#	
(b) ACCT3142# or CSCI2520# or DSME2051# or SEEM3550#	
(c) CSCI1510 or 1520 or 1530 or 1540 or 1580	
(d) {DSME2011# and (DSME2021# or FINA2020)} or {STAT2001# and 2006#}	
(e) FINA2010 or 2110	
3. Elective Courses:	33
(a) At least 9 units of Quantitative Methods courses from the following: CSCI2800#, 3170#, DSME4130#, ECON3121#, 4120#, FINA3220, 4210, 4220, 4250, 4260, MATH3210#, 3220#, 3230#, 3240#, 3270#, 3280#, 3290#, 3310#, 3320#, 4220#, 4230#, 4240#, SEEM3440#, STAT3007#, 3008#, 4002#, 4003#, 4004#, 4005#, 4006#, 4008#	
(b) At least 12 units of Business courses from the following, including at least 6 units of FINA courses, with at most 6 one-unit courses: ACCT2121, 4214#, 4251#, FINA2210, 3010, 3020, 3030, 3040, 3060, 3070, 3110, 3210, 3230, 3240, 3280, 3310, 3320, 3330, 3340, 3350, 3360, 3420, 4010, 4020, 4030, 4040, 4050, 4060, 4230, 4240, 4310, 4320, 4330, 4340, 4350, MGNT1020, 2610#, 4010#, MKTG2010#	
(c) At least 9 units of Core courses from the following: FINA4110, 4120, 4150, 4160, 4370	
(d) At least 3 units of Capstone / Research courses from the following: FINA4130, 4140, 4190, 4380, 4390, 6232, 6242, 6252	
<b>Total:</b>	<b>69</b>

**Explanatory Notes:**

1. FINA courses at 2000 and above level as well as those labeled with # will be included in the calculation of Major GPA for honours classification.
2. Completion of an eligible second major or minor programme from the Faculty of Engineering (Computer Science, Electronic Engineering, Information Engineering, Web and Cloud Computing) or the Faculty of Science (Mathematics, Physics, Risk Management Science, Statistics) is deemed to have satisfied 3(a) Quantitative Methods area of elective courses requirement. Only courses that satisfied the requirement of 3(a) will be included in the calculation of the student's Major GPA.

	Recommended Course Pattern	Units
<b>First Year of Attendance</b>	1 <sup>st</sup> term	
	Faculty Package: ACCT1111, DSME1030	6
	Major Required: MATH1010	3
	Major Elective(s):	

	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, DSME2011 or STAT2001, MATH2010 Major Elective(s): 3 units from Quantitative Methods and Business electives	9-10 3
	2 <sup>nd</sup> term Major Required: ACCT3142 or CSCI2520 or DSME2051 or SEEM3550, DSME2021 or FINA2020 or STAT2006, FINA3080 Major Elective(s): 3 units from Quantitative Methods and Business electives	9 3
<b>Third Year of Attendance</b>	1 <sup>st</sup> term Major Required: Major Elective(s): 12 units from Quantitative Methods, Business, and Core electives	12
	2 <sup>nd</sup> term Major Required: Major Elective(s): 12 units from Quantitative Methods, Business, and Core electives	12
<b>Fourth Year of Attendance</b>	1 <sup>st</sup> term Major Required: Major Elective(s): 3 units from Capstone / Research electives	3
	2 <sup>nd</sup> term Major Required: Major Elective(s):	
<b>Total (including Faculty Package):</b>		<b>69-70</b>

<b>Course List</b>		
<i>Course Code</i>	<i>Course Title</i>	<i>Unit(s)</i>
<b>Faculty Package</b>		
ACCT1111	Foundations in Financial Accounting	3
DSME1030	Economics for Business Studies I	3
DSME1040	Economics for Business Studies II	3
<b>Required Courses</b>		
ACCT3142	Contemporary Accounting Information Systems	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
CSCI2520	Data Structures and Applications	3
DSME2011	Statistical Analysis for Business Decisions	4
DSME2021	Applied Econometrics for Business Decisions	3
DSME2051	Business Information Systems	3
FINA2010	Financial Management	3
FINA2020	Introduction to Empirical Methods in Finance	3
FINA2110	Financial Management: Foundations and Analysis	3
FINA3080	Investment Analysis and Portfolio Management	3
MATH1010	University Mathematics	3
MATH1030	Linear Algebra I	3

MATH2010	Advanced Calculus I	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
Elective Courses		
Quantitative Methods		
CSCI2800	Numerical Computation	3
CSCI3170	Introduction to Database Systems	3
DSME4130	Business Applications Programming	3
ECON3121	Introductory Econometrics	3
ECON4120	Applied Forecasting Methods	3
FINA3220	Life Contingencies I	3
FINA4210	Life Contingencies II	3
FINA4220	Non-life Actuarial Models	3
FINA4250	Applications of Risk Models	3
FINA4260	Construction and Evaluation of Actuarial Models II	3
MATH3210	Linear Programming	3
MATH3220	Operations Research & Logistics	3
MATH3230	Numerical Analysis	3
MATH3240	Numerical Methods for Differential Equations	3
MATH3270	Ordinary Differential Equations	3
MATH3280	Introductory Probability	3
MATH3290	Mathematical Modeling	3
MATH3310	Computational and Applied Mathematics	3
MATH3320	Scientific Computing	3
MATH4220	Partial Differential Equations	3
MATH4230	Optimization Theory	3
MATH4240	Stochastic Processes	3
SEEM3440	Operations Research II	3
STAT3007	Introduction to Stochastic Processes	3
STAT3008	Applied Regression Analysis	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
Business		
ACCT2121	Introductory Management Accounting	3
ACCT4214	Applied Financial Statement Analysis	3
ACCT4251	Securities Regulation	3
FINA2210	Interest Theory and Finance	3
FINA3010	Financial Markets	3
FINA3020	International Finance	3
FINA3030	Management of Financial Institutions	3
FINA3040	Central Banking and Regulations of Financial Institutions	3
FINA3060	Real Estate Finance and Investment	3
FINA3070	Corporate Finance: Theory and Practice	3
FINA3110	Issues in Finance	3
FINA3210	Risk Management and Insurance	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
MGNT1020	Management	3
MGNT2610	Legal Environment, Corporate Social Responsibility and Business Ethics	3
MGNT4010	Strategic Management	3
MKTG2010	Marketing Management	3
Core		
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
Capstone / Research		
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
FINA6232	Seminar in Asset Pricing	3
FINA6242	Seminar in Corporate Finance	3
FINA6252	Empirical Methods in Asset Pricing	3