NUS National University of Singapore

College of Humanities and Sciences

Advice for Quantitative Finance

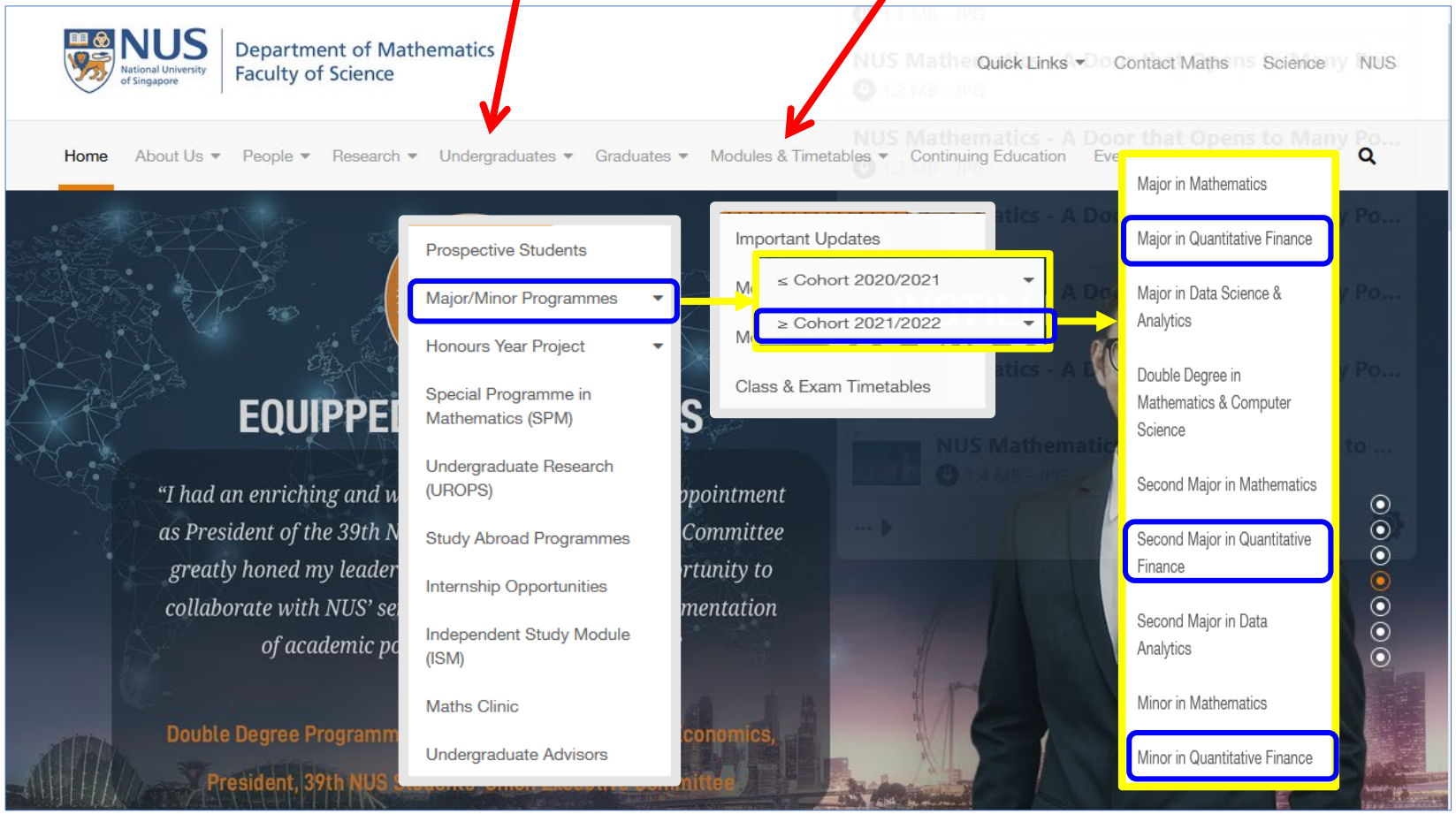
A/P Tan Hwee Huat

Department of Mathematics

- Department website

  http://www.math.nus.edu.sg

  (select “Undergraduates” and “Modules & Timetables” in the drop-down menu)



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Quantitative Finance Programmes

- Major in Quantitative Finance 60 MCs
- Second Major in Quantitative Finance 40 MCs
- Minor in Quantitative Finance 20 MCs

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Major in Quantitative Finance requirements

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Level 1000

▷ Pass the following module

Sem 1 or 2
- QF1100 Introduction to Quantitative Finance

Level 2000

▷ Pass the following modules

Sem 1 or 2
- MA2001 Linear Algebra I

Sem 1 or 2
- MA2002 Calculus

Sem 1 or 2
- MA2104 Multivariable Calculus

* Sem 1 or 2
- MA2213 Numerical Analysis I or DSA2102 Essential Data Analytics Tools: Numerical Computation

* Sem 1 or 2
- MA2116/ST2131 Probability

Sem 2
- QF2103 Computing for Quantitative Finance

Sem 1
- QF2104 Fundamentals of Quantitative Finance

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Level 3000

▷ Pass the following modules

Sem 2
- QF3101 Investment Instruments and Risk Management

Sem 2
- QF3103 Advanced Mathematics in Quantitative Finance

Sem 1 or 2
- ST3131 Regression Analysis

Level 4000

▷ Pass 4 modules from the following

Sem 1
- QF4102 Financial Modelling and Computation

Sem 1
- QF4103 Mathematical Models of Financial Derivatives
- QF4104 Project in Quantitative Finance and Fintech

▷ Pass one of the following modules

Sem 1
- QF5210 Financial Time Series and Computation
- QF4211 Digital Currencies
- QF4212 Data Science in Fintech

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Second Major in Quantitative Finance requirements

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Level 1000

- **Pass the following module**
  - QF1100 Introduction to Quantitative Finance

Level 2000

- **Obtain 8 MCs from modules coded**
  MA15xx/MA20xx

- **Pass the following modules**
  - MA2104 Multivariable Calculus or MA2311 Techniques in Advanced Calculus
  - MA2116/ST2131 Probability or
    EC2303 Foundation of Econometrics or
    ST2334 Probability and Statistics or
    MA2301 Basic Applied Mathematics
  - QF2103 Computing for Quantitative Finance
  - QF2104 Fundamentals of Quantitative Finance

Level 3000 & 4000

▷ Pass 3 modules from the following

- QF3101 Investment Instruments and Risk Management
- QF3103 Advanced Mathematics in Quantitative Finance
- QF4102 Financial Modelling and Computation
- QF4103 Mathematical Models of Financial Derivatives
- ST3131 Regression Analysis
- EC3303 Econometrics I
- FIN3702 Investment Analysis and Portfolio Management
- FIN3716 Financial Modelling

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Minor in Quantitative Finance requirements

Level 1000

▷ **Pass the following module**

- QF1100 Introduction to Quantitative Finance

Level 2000

▷ **Pass the following modules**

- MA2301 Basic Applied Mathematics*
- QF2104 Fundamentals of Quantitative Finance

*MA2301 can be replaced by three modules, with one module in each of the areas of calculus, linear algebra and probability, as follows:

Calculus	Linear Algebra	Probability
MA1102R/MA2002 Calculus	MA1101R/MA2001 Linear Algebra I	MA2216/MA2116/ST2131 Probability
MA1312 Calculus with Applications	MA1508E Linear Algebra for Engineering	ST2334 Probability and Statistics
MA1505 Mathematics I	MA1513 Linear Algebra with Differential Equations	
MA1507 Advanced Calculus		
MA1511 Engineering Calculus		
MA1521 Calculus for Computing		

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Level 3000

▷ Pass the following module

- QF3101 Investment Instruments and Risk Management

▷ Pass one of the following modules

- QF3103 Advanced Mathematics in Quantitative Finance
- ST3131 Regression Analysis
- EC3303 Econometrics I
- FIN3702 Investment Analysis and Portfolio Management
- FIN3716 Financial Modelling

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Formulating Study Plan

- cover CHS common curriculum modules in year 1 and 2
- gather list of modules to be read for QF major, a second major and/or minor of your choice
- use NUSMODs and department web info to determine the semester in which each module is offered, and the pre-requisite required for each module

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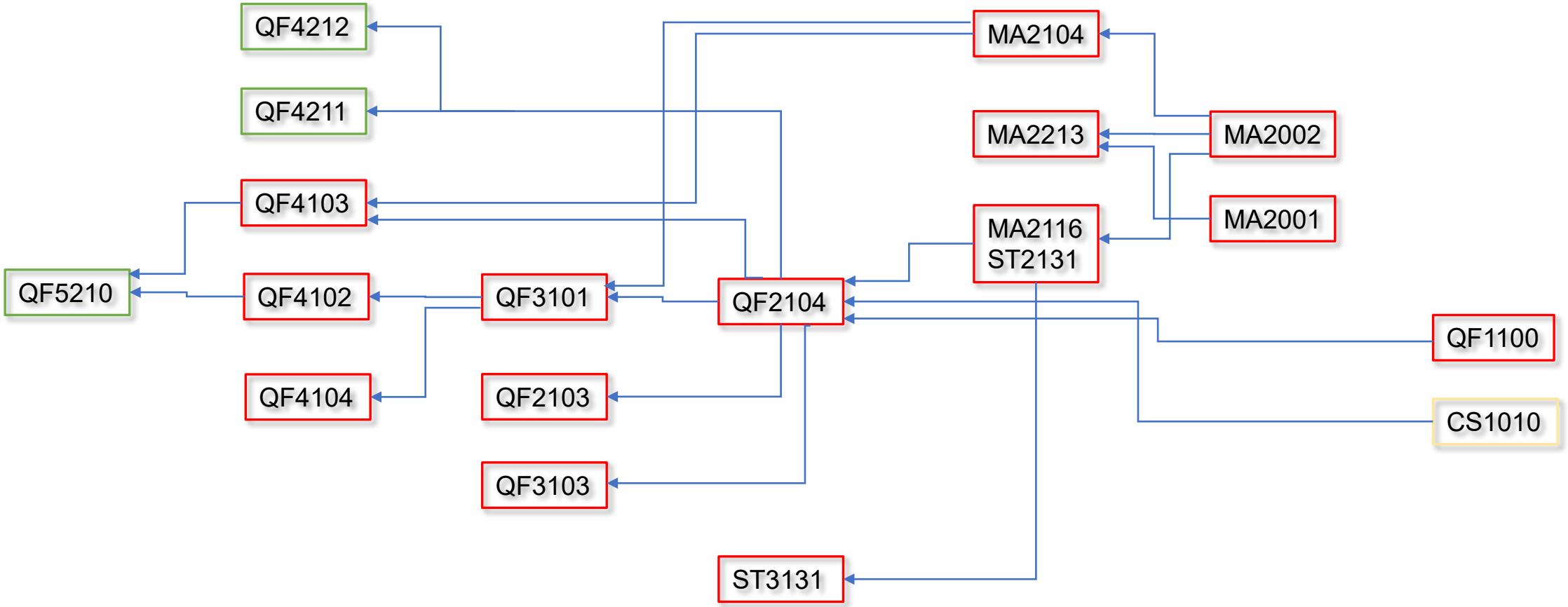

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Sample Study Plan

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Year 1	
Sem 1	Sem 2
Pair 1: Integrated Module in Social Sciences Part 2: Integrated Module in Humanities	Pair 1: Integrated Module in Humanities Pair 2: Integrated Module in Social Sciences
Pair 1: Scientific Inquiry I Pair 2: Integrated Module in Asian Studies	Pair 1: Integrated Module in Asian Studies Pair 2: Scientific Inquiry I
Pair A: Data Literacy Pair B: Design Thinking	Pair A: Design Thinking Pair B: Data Literacy
QF1100 Introduction to Quantitative Finance	Writing
UE 1	MA2001 Linear Algebra I

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Year 2	
Sem 1	Sem 2
Scientific Inquiry II	Artificial Intelligence
Digital Literacy (CS1010S)	Interdisciplinary II
Communities and Engagement	MA2104 Multivariable Calculus
Interdisciplinary I	MA2213 Numerical Analysis I
MA2002 Calculus	MA2116/ST2131 Probability

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Year 3	
Sem 1	Sem 2
QF2104 Fundamentals of Quantitative Finance	QF2103 Computing for Quantitative Finance
ST3131 Regression Analysis	QF3101 Investment Instruments and Risk Management
UE 2	QF3103 Advanced Mathematics in Quantitative Finance
UE 3	UE5
UE 4	UE6

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Year 4	
Sem 1	Sem 2
QF4102 Financial Modelling and Computation	QF4104 Project in Quantitative Finance and Fintech
QF4103 Mathematical Models of Financial Derivatives	UE 9
One of the following modules: • QF5210 Financial Time Series: Theory and Computation • QF4211 Digital Currencies • QF4212 Data Science in Fintech	UE 10
UE 7	UE 11
UE 8	UE 12

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Thank You