

**SYLLABUS FOR THE DEGREE OF  
BACHELOR OF SCIENCE IN QUANTITATIVE FINANCE  
[BSC(QFIN)]**

This syllabus applies to candidates admitted to the first year of study of the 4-year curriculum in the academic year 2020-21 and thereafter.

- Candidates must enroll and attempt examination in not fewer than 240 credits of courses in accordance with the regulations and the syllabuses. In addition, the 240 credits of courses should be completed in the following manner:

UG 5 requirements [54 credits]	
Languages*	18 credits
HKU Common Core Curriculum*	36 credits
Major in Quantitative Finance [96 credits]	
- First year Core courses	36 credits
- Second year Core courses	36 credits
- Third year Core courses	12 credits
- Fourth year Core courses	12 credits
Free Electives [90 credits]	90 credits
Total credits for degree programme	240 credits

- To fulfill the graduation requirement of this degree as specified in the Board of the Faculty of Business and Economics in accordance with UG 5 of the Regulations for the First Degree Curricula, candidates must satisfactorily complete the credits of courses identified by an asterisk (\*). Those courses include the following areas of study: English language enhancement (12 credits), Chinese language enhancement (6 credits) and Common Core courses (36 credits), and successful completion of a capstone experience.
- The Common Core courses are categorized under four Areas of Inquiry (AoI): Scientific and Technological Literacy, Humanities, Global Issues, and China: Culture, State and Society. Candidates must complete a total of 36 credits, comprising at least one and not more than two courses from each Area of Inquiry with not more than 24 credits of courses being selected within one academic year except where candidates are required to make up for failed credits.
- The following courses are designated as Faculty Core courses: ACCT1101, ECON1210, FINA1310 and a statistics course, as prescribed in the syllabus. Candidates are not required to re-take Faculty Core courses where any of these courses form part of the requirements of a second major offered by the Faculty of Business of Economics, however, candidates must complete an equivalent number of credits of free electives in lieu of the Faculty Core courses.
- The courses listed in the syllabus will not necessarily be offered every year.
- For courses offered by the Faculty of Business and Economics, the final examination is normally 2 hours in length. Final grading will normally be determined by the final examination (30-60%) and coursework (40-70%) except for final project/final papers which will be assessed by 100% coursework.
- Candidates may select up to four courses offered under the syllabus for the Master of Economics (MEcon) degree as third or fourth year free electives, subject to availability and the approval of the BSc(QFin) Programme Director and the MEcon Programme Director. Each of these MEcon courses carries 6 credits, unless otherwise specified. Candidates should satisfy the requirements prescribed by the Faculty of Business and Economics.
- Candidates should take note of any impermissible combinations of majors/minors listed in the document "Major/Minor Programmes offered by FBE" for the year concerned.
- Candidates are not permitted to enroll in courses where significant portions of the course contents overlap with each other, or where the courses are mutually exclusive.

## 1. UG 5 requirements [54 credits]

### (a) Languages\* [18 credits]

Course code	Course title	Year of study	Credits
CAES1000 <sup>#</sup>	Core University English *	1	6
CAES9920	Academic communication for business and economics*	2	6
CBBA9003 <sup>^</sup> <i>or</i>	Practical Chinese for BEcon/BEcon&Fin/BSc(QFin) students* <i>or</i>	3	6
CUND9002 <sup>^</sup> <i>or</i>	Practical Chinese and Hong Kong society <i>or</i>	1 or 2 or 3	
CUND9003 <sup>^</sup>	Cantonese for Non-Cantonese speaking students	1 or 2 or 3	

<sup>#</sup> Candidates who have achieved Level 5 or above in English Language in the Hong Kong Diploma of Secondary Education Examination, or equivalent, are exempted from this requirement, and Core University English is optional. Those who do not take this course should take an elective course in lieu, see *Regulation UG 6*.

<sup>^</sup> Putonghua-speaking students must take CUND9002 or CUND9003. Students who have not studied the Chinese language during their secondary education or who have not attained the requisite level of competence in the Chinese language to take CBBA9003 should write to the Board of the Faculty to apply for exemption from the Chinese language requirement and take a 6-credit Cantonese or Putonghua language course offered by the School of Chinese especially for international and exchange students, or take a free elective course, in lieu of CBBA9003. If a Cantonese or Putonghua language course offered by the School of Chinese or a free elective course is taken in lieu of CBBA9003, it may be taken in any year of study.

### (b) HKU Common Core Curriculum\* [36 credits]

Course code	Course title	Year of study	Credits
CCXXxxxx	3 CC courses in any three Areas of Inquiry*	1	18
CCXXxxxx	2 CC courses in any two Areas of Inquiry*	2	12
CCXXxxxx	1 CC course in any Area of Inquiry*	3	6

## 2. Major in Quantitative Finance [96 credits]

Course code	Course title	Year of study	Credits
<b>Faculty Core Courses – complete all of the following courses:</b>			
ACCT1101	Introduction to financial accounting	1	6
ECON1210	Introductory microeconomics	1	6
FINA1310	Corporate finance	1	6
STAT2601	Probability and statistics I	2	6
<b>Disciplinary Core Courses – complete all of the following courses:</b>			
ECON1220	Introductory macroeconomics	1	6
MATH1013	University mathematics II	1	6
MATH2014	Multivariable calculus and linear algebra	1	6
COMP1117	Computer programming	2	6
ECON2280	Introductory econometrics	2	6
FINA2320	Investments and portfolio analysis	2	6
FINA2322	Derivatives	2	6
FINA3350	Mathematical finance	3	6
FINA3351	Spreadsheet financial modeling	3	6
<b>Disciplinary Electives – complete three of the following courses, at least one of them must be a capstone course:</b>			
COMP2119	Introduction to data structures and algorithms	2 or 3 or 4	18
FINA2390	Financial programming and databases	2 or 3 or 4	
FINA3322	Credit risk	3 or 4	
FINA3323	Fixed income securities	2 or 3 or 4	
FINA3353	Regulatory and operational issues in finance	3 or 4	

<i>Course code</i>	<i>Course title</i>	<i>Year of study</i>	<i>Credits</i>
ECON3283 <i>or</i>	Economic forecasting <i>or</i>	3 or 4	
STAT4601	Time series analysis		
MATH3405	Differential equations	3 or 4	
MATH3603 <i>or</i>	Probability theory <i>or</i>	3 or 4	
STAT3603	Stochastic processes		
FINA4341	Quantitative risk management* (Capstone course)	4	
FINA4350	Text analytics and natural language processing in finance and fintech	3 or 4	
FINA4359	Big data analytics applied toward quantitative finance	3 or 4	
FINA4354	Financial engineering* (Capstone course)	4	
STAT2602	Probability and statistics II	2 or 3 or 4	

**3. Free Electives [90 credits]** – any courses except Common Core courses

**REFERENCE TABLE**

<b>Year</b>	<b>Lang.</b>	<b>Common Core</b>	<b>Major (Core)</b>	<b>Free Electives</b>	<b>Total</b>
<b>I</b>	6 credits	18 credits	36 credits	-	60 credits
<b>II</b>	6 credits	12 credits	36 credits	6 credits	60 credits
<b>III</b>	6 credits	6 credits	12 credits	36 credits	60 credits
<b>IV</b>	-	-	12 credits	48 credits	60 credits
<b>Total</b>	18 credits	36 credits	96 credits	90 credits	240 credits