Bachelor of Science

(4-year Curriculum)

Major in Risk Management

Minor in Actuarial Studies
Life is full of risks, and the risks are costly!
Examples of Applications

Basel Accords
A set of banking regulation recommendations created by the Basel Committee on Banking Supervision (BCBS).
The central bank governors of the world's ten largest economies created the BCBC.

Credit Risk
Market Risk
Operational Risk
Examples of Applications
Example of Applications

- A day trader who bought hundreds of oil futures contracts during its historic price crash last month was told he owed $9 million after a technology issue prevented his trading platform from displaying negative oil prices, Bloomberg reported on Friday.
Examples of Applications

Q: Can the stock price be predicted?

A: It is predicted only when the market is not efficient. 

----- by E. Fama (Nobel Laureate in Economics 2013)
Examples of Applications

Investment Banking Functions

Merger and Acquisitions

Research

Merchant Banking

IPOs

Risk Management

Structuring of Derivatives

Investment management

Black Scholes Option Model

Capital Asset Pricing Model Formula

\[ R_a = R_{rf} + B_a (R_m - R_{rf}) \]
Q: What happened if the stock market fused four times in a single month?

Crazy but true!

A: Stress testing by using scenario analysis.
What do we need from your Mathematics?

- Set notation and theory
- Functions \((incl. \text{ limits, continuity})\)
- Sequences, series
- Basic calculus \((incl. \text{ partial differentiation, double integration})\)
- Vectors, matrices \((basic \text{ operations})\)
Mathematical background adequate?

- Students must have **level 2 or above** in 
  HKDSE Extended Module 1 or 2 of Mathematics
  
or equivalent

- Otherwise, strongly advised to take
  
  **MATH1011 University Mathematics I**
  
in Semester 1.
# Suggested / Example Structure of BSc (Major in Risk Management) Curriculum

<table>
<thead>
<tr>
<th>Year</th>
<th>One</th>
<th>Two</th>
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<tbody>
<tr>
<td>Semester</td>
<td>One</td>
<td>Two</td>
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<tr>
<td><strong>Disciplinary Core</strong></td>
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<tr>
<td></td>
<td>MATH1013 University Mathematics II</td>
<td>MATH2014 Multivariable Calculus and Linear Algebra</td>
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<tr>
<td><strong>Science Foundation Courses</strong></td>
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<tr>
<td></td>
<td>SCNC1111 Scientific Method and Reasoning</td>
<td>SCNC1112 Fundamentals of Modern Science</td>
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<tr>
<td><strong>Common Core</strong></td>
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<td></td>
<td>Six common core courses within the first three years</td>
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<td><strong>Language</strong></td>
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<td>CAES1000 Core University English (offered in both semesters)</td>
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Major in Risk Management vs Major in Statistics

- All 7 introductory level courses **SAME**
- Advanced level core courses:
  - 1 SAME, 3 DIFFERENT
- **Risk Management** –
  - courses focus primarily on business-related topics: e.g. investment, insurance, finance, banking, etc.
- **Statistics** –
  - courses cover wide range of topics with emphasis on “METHODS”, their applications, and underlying theory.
- Students **CANNOT** double major or major/minor in **Risk Management & Statistics**
- For detailed curriculum structure, please refer to
Reminder

- plan ahead
- watch out for pre-requisites of individual courses
- courses **CANNOT** be double-counted to fulfill different majors/minors

(exception for double major in Science:

SCNC1111 & SCNC1112 & up to 12 credits of compulsory courses

REQUIRED by both Science majors can be double-counted)

- consult course selection advisors if necessary
https://www.careercast.com/jobs-rated/best-jobs-2021
Support from University and Department

- **HKU**: Centre of Development and Resources for Students
  - NETmatch, NETjobs, JIJIS (Joint Institutions Job Info. System)
- **Department**: Internship / Job Online Application System

Contact person: Dr C W Kwan
<cwkwan@hku.hk>
Career Development Training

- **Summer IT course:**
  - Essential IT skills (certificate course)

- **Career Advising Programme (CAP) to prepare students for:**
  - internships and job opportunities
  - advancing resume and interview skills
## Minor in Actuarial Studies

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<thead>
<tr>
<th>Disciplinary Elective</th>
<th>Introductory</th>
<th>Advanced</th>
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<tbody>
<tr>
<td>MATH1013</td>
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Contact Persons

- Co-ordinator
  - Ke Zhu

- Course Selection Advisors
  - Dora Zhang
  - Ke Zhu

- Tel: 3917 2466

- Email: ug_enquiry@saas.hku.hk