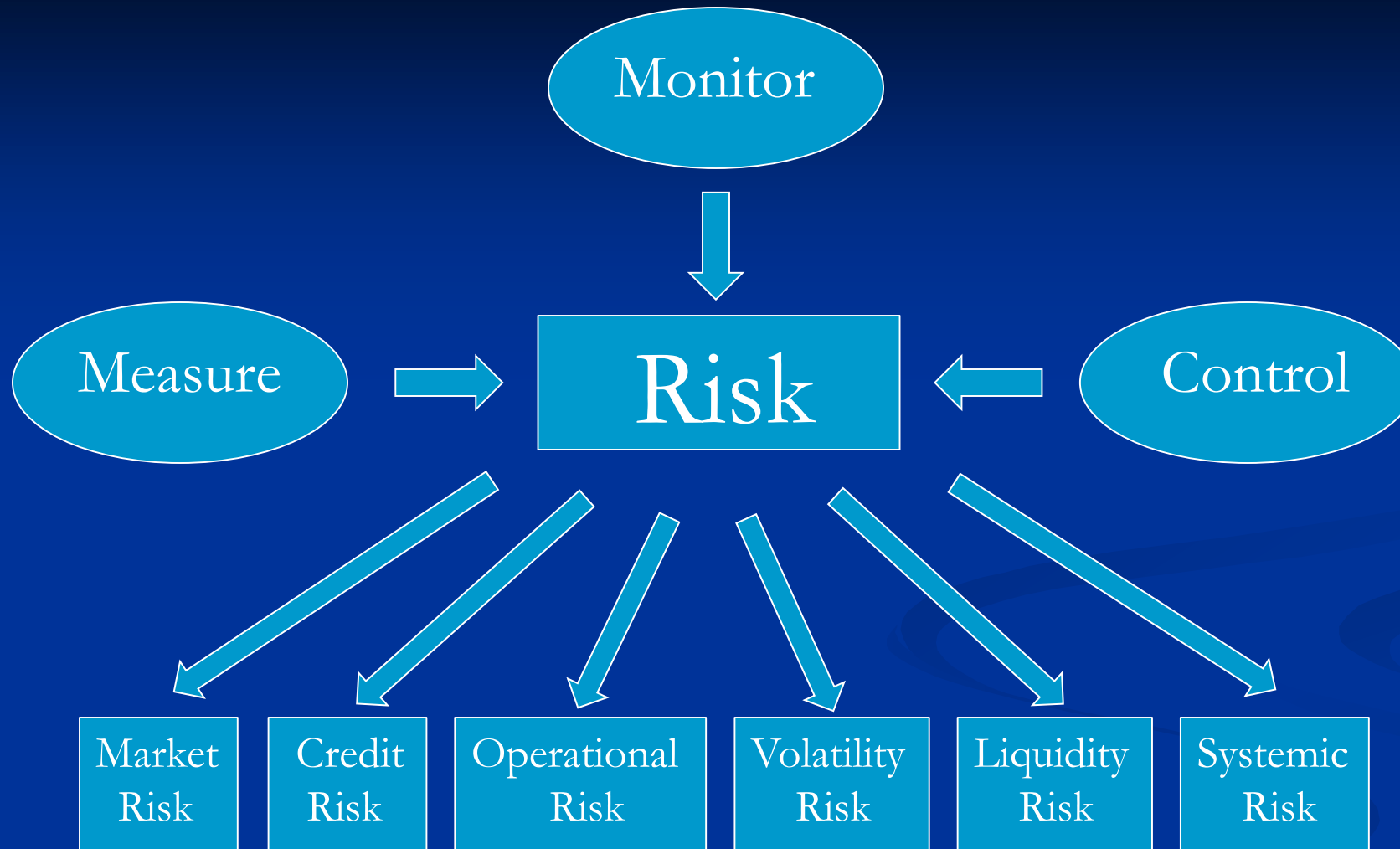


Bachelor of Science

(4-year Curriculum)






Major in Risk Management

Minor in Actuarial Studies

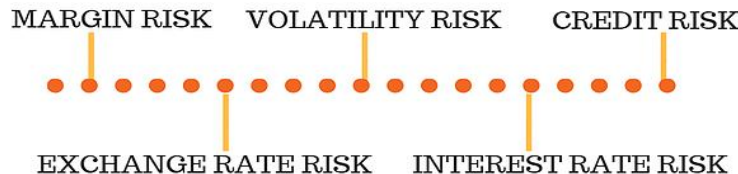


Life is full of risks, and the risks are costly!

Examples of Applications

 <p>Basel I 1988</p>	 <p>Basel II 2004</p>	 <p>Basel III 2018</p>	<h2>Basel Accords</h2> <p><i>A set of banking regulation recommendations created by the Basel Committee on Banking Supervision (BCBS).</i></p> <p><i>The central bank governors of the world's ten largest economies created the BCBS.</i></p>
  <p>Credit Risk</p> <p>Market Risk</p> <p>Operational Risk</p>			

Examples of Applications



GARCH
MODELS



REALIZED
VOLATILITY

Implied Volatility


Examples of Applications

IMPOSSIBLE TO DETERMINE IF
A STOCK IS UNDERVALUED
OR OVERVALUED!

Efficient Market Hypothesis

Impossible to "beat" the market
because all current and relevant
information is already reflected
into the share price.

THE CURRENT PRICE IS THE RIGHT PRICE!



The illustration features several elements: a red circle containing a stack of papers, a newspaper labeled 'NEWS', and a line graph; a stack of green dollar bills; and a grey bomb-like shape labeled 'RISK' hanging from a hook.

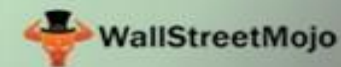
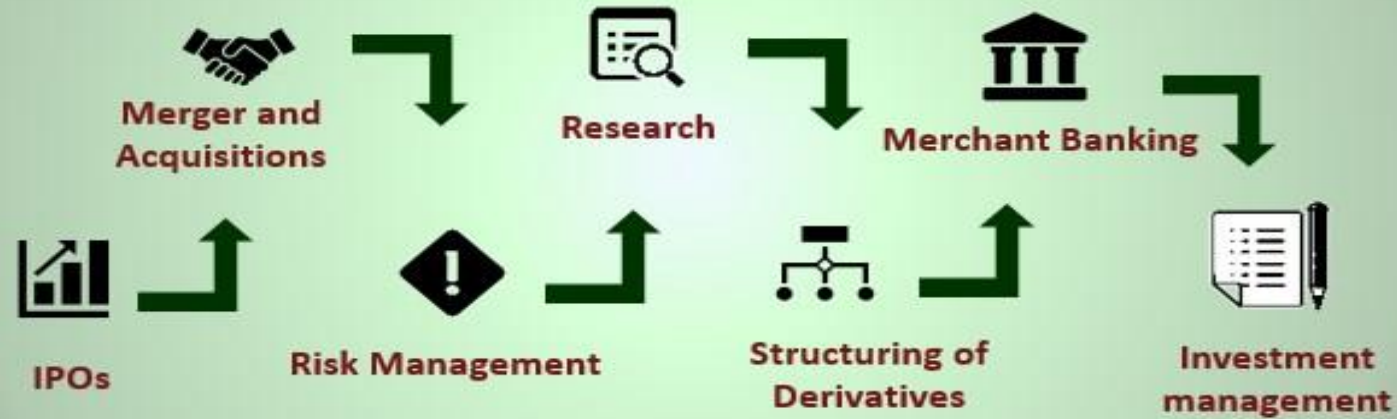
Q: Can the stock price be predicted?

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



Capital Asset Pricing Model Formula

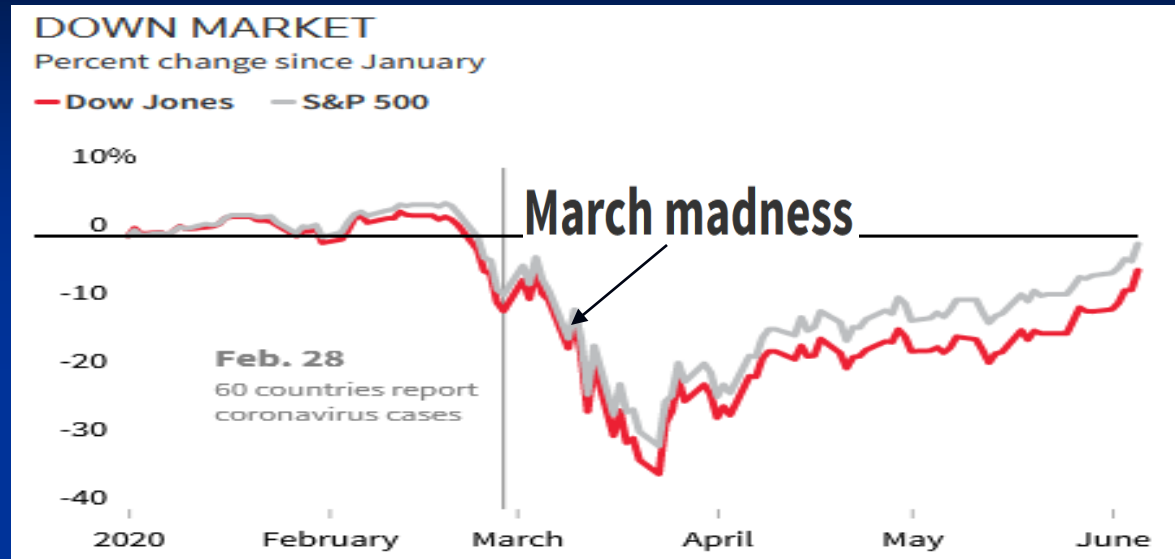
$$R_a = R_{rf} + B_a (R_m - R_{rf})$$

Examples of Applications

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.* limits, continuity)
- Sequences, series
- Basic calculus (*incl.* partial differentiation, double integration)
- Vectors, matrices (basic 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.

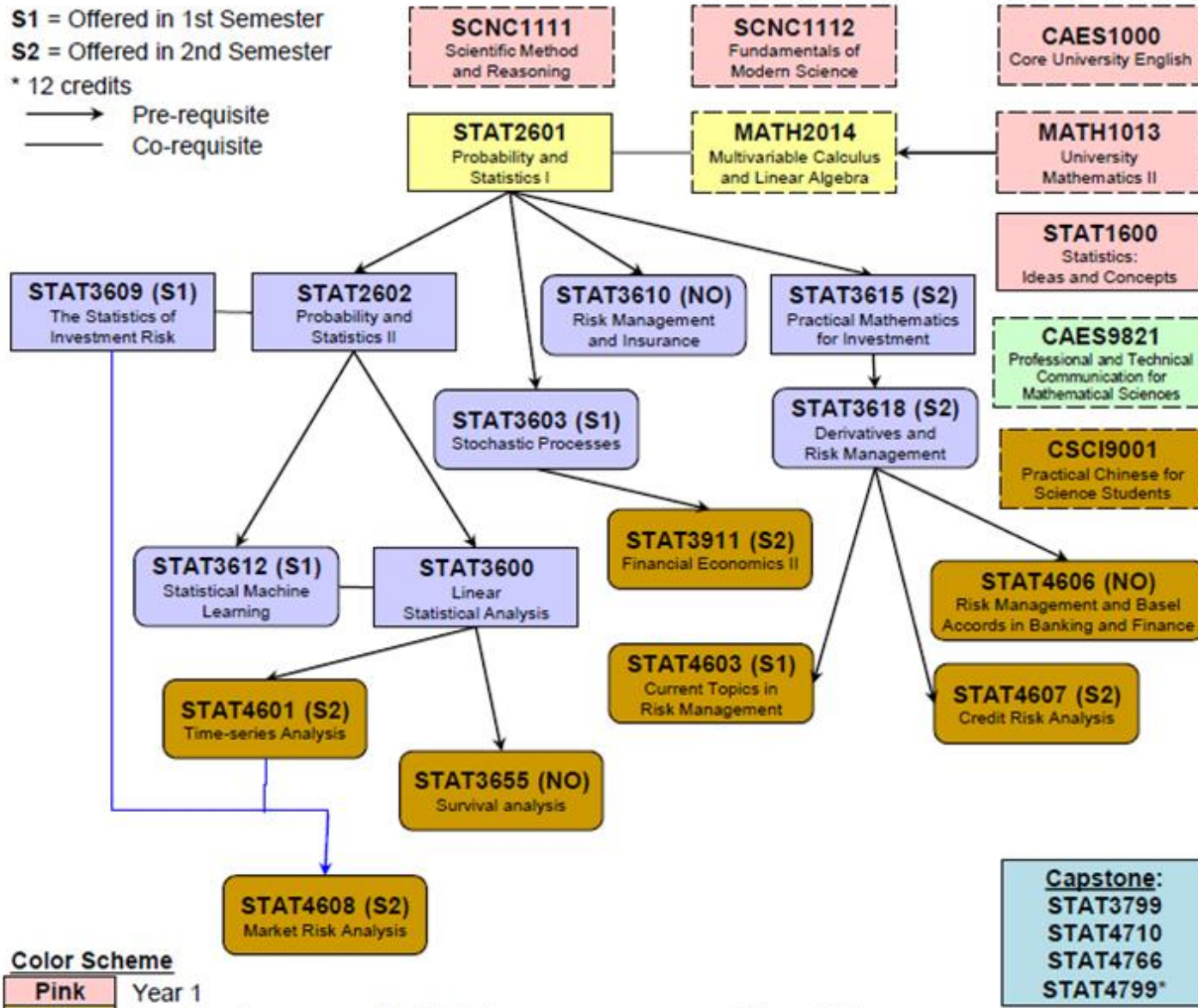
Suggested / Example Structure of BSc (Major in Risk Management) Curriculum

Year	One		Two	
Semester	One	Two	One	Two
Disciplinary Core	MATH1013 University Mathematics II STAT1600 Statistics: Ideas and Concepts	MATH2014 Multivariable Calculus and Linear Algebra	STAT2601 Probability and Statistics I	STAT2602 Probability and Statistics II STAT3615 Practical Mathematics for Investment
Science Foundation Courses	SCNC1111 Scientific Method and Reasoning	SCNC1112 Fundamentals of Modern Science		
Common Core	Six common core courses within the first three years			
Language	CAES1000 Core University English (offered in both semesters)		CAES9821 Professional and Technical Communication for Mathematical Sciences (offered in both semesters)	

Flow Chart of Disciplinary Courses for BSc Major in Risk Management

S1 = Offered in 1st Semester
 S2 = Offered in 2nd Semester
 * 12 credits

→ Pre-requisite
 — Co-requisite



Color Scheme

Pink	Year 1
Yellow	Year 1 or 2
Green	Year 2
Purple	Year 2 or 3
Brown	Year 3 or above

Border Scheme

Solid	Offered by SAAS
Dashed	Other Departments

Shape Scheme

Rectangle	Core
Rounded	Elective

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
<https://webapp.science.hku.hk/sr4/servlet/enquiry?frmId=MenuP>

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

FRM Exam (Financial Risk Management Certification)



PRM (Professional Risk Manager)



www.educba.com

<https://www.careercast.com/jobs-rated/best-jobs-2021>



Support from University and Department

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

The screenshot shows a web browser window with the URL <https://apps.saas.hku.hk/internship/index.php>. The page header includes the Department of Statistics & Actuarial Science logo and a group photo of students. The main content area displays user profile information:

UID	2008000001	Major	Statistics
Name	Ugrad Test_Student1	E-mail	@hku.hk
Last Status	Available working period: From: 2019-04-10 To: 2019-11-30	Contact Phone	+852 12345678
CAP Profile: (Cover letter & CV)	<input type="button" value="Upload Profile"/>	PPP Score	Letter & CV Submitted: 0.0 Case Analysis & Presentation: 0.0 Mock Interview: 0.0

Below the profile information, there are tabs for "Current Job List", "Application History", and "Past Internship/Jobs". The "Current Job List" tab is active, showing a table of job records:

Jobtype	Company Name	Job Title / Job Description / Form	Closing date	Action
Full-time_ST&AS	EFA	Portfolio Investment Analyst(ASAP) (GRAD/Internship) IR 1452	2019-08-11	Submit completed application via email at careers@efadrin.com
Internship_AS&ST	AIA Group	Actuarial Internship Programme (Jan-Jun 2020) AW 1526	2019-08-31	Submit completed application via email at Rachel.yh.chan@aia.com
Internship_AS&ST	Blue, trade name of Aviva Life Insurance Co Ltd	Actuarial Intern / Jan-Jun 2020) MY 1529	2019-08-31	Submit completed application via email at careers@blue.com.hk
Full-time_AS&ST	CIGNA	Contract Associate - Valuation (IFRS) (ASAP) JC 1629	2019-08-25	Submit completed application via email at sandy.lau@cigna.com
Full-time_AS&ST	YF Life Insurance International Ltd	Actuarial Analyst (GRAD/ASAP) VL 1643	2019-08-18	Submit completed application via email at recruit@yflife.com

Contact person:

Dr. Eric LI

<internship-job@saas.hku.hk>

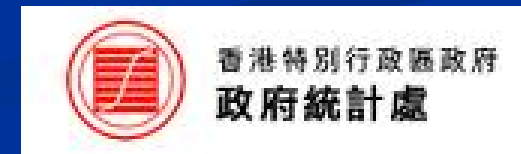
Career Development Training

■ Summer IT course:

- Essential IT skills (certificate course)

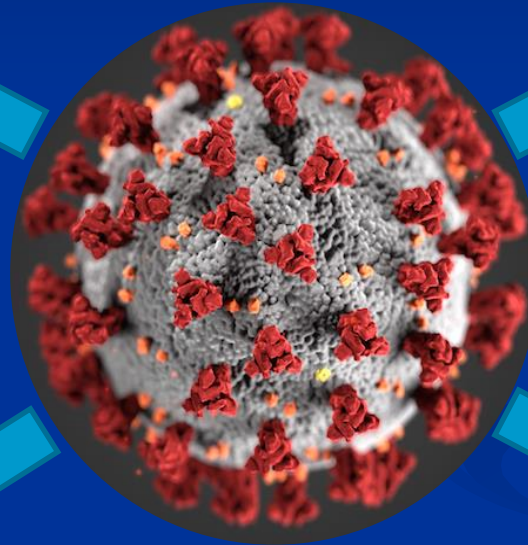
■ Career Advising Programme (CAP) to prepare students for:

- internships and job opportunities
- advancing resume and interview skills



Minor in Actuarial Studies

Disciplinary Elective			
Introductory		Advanced	
MATH1013	FINA1310	STAT3612	STAT3615
STAT2601	STAT2602	STAT3901	STAT3904
STAT2604		STAT3906	STAT3908
		STAT3910	STAT3911
		STAT3953	STAT4903



Contact Persons

- Co-ordinator & Course Selection Adviser
 - Dr. K.P. WAT
- Credit Transfer
 - Dr. Chen WANG
- Tel: 3917 2466
- Email: ug_enquiry@saas.hku.hk