THE UNIVERSITY OF HONG KONG
FACULTY OF BUSINESS AND ECONOMICS

FINA3351A – Spreadsheet Financial Modeling

GENERAL INFORMATION

Instructor: Dr. Jinghan MENG
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Office: K. K. Leung 1001
Consultation times: By appointment via email.

Tutor: Cindy Mok
Email: cindymok@hku.hk
Consultation times: TBA

Lecture: Friday 14:30 – 17:20, KKLG102.

Teaching arrangement:

- Lectures will be delivered face-to-face in the assigned classroom in the entire first semester of 2021-2022.
- Students will not have an option to attend lectures and tutorials online via Zoom. All the lectures and tutorials will be recorded and posted on HKU Moodle.
- Both lectures and tutorials will take attendance from the third week (the week of September 13, 2021). Students who cannot attend the lecture/tutorial should submit a leave of absence to the instructor/tutor via email before the lecture/tutorial starts.

Tutorial: TBA on Moodle

Pre-requisites:
FINA2322 Derivatives; *and*
FINA2320 Investments and portfolio analysis *or* STAT3609 The statistics of investment risk
Co-requisites: None
Mutually exclusive: None

Course Website: MOODLE via HKU portal
Other important details:

- Students must bring laptop to class.
- Microsoft EXCEL must be installed on the laptop. HKU ITS provides Office 365 software to students. Please follow the guidelines on website: https://www.its.hku.hk/documentation/guide/cloud/o365-student.

COURSE DESCRIPTION

This course studies the design and implementation of computer programs for financial modeling using spreadsheets and structured programming techniques. The course will focus on developing skills in translating financial models into spreadsheets and programs using Microsoft Excel and Visual Basic for Applications (VBA), examining popular financial and investment models, integrating spreadsheet functionalities, programming, and interfaces in financial applications, and hands-on experience in designing, coding, and debugging computer programs.

COURSE OBJECTIVES

1. To understand basic and advanced financial models from both conceptual and computational perspectives.
2. To develop skills in developing financial models to solve financial problems and solving them with Microsoft Excel and VBA.
3. To utilize and integrate spreadsheet functionalities, programming, and interfaces in financial applications.
4. To develop skills in designing, coding, and debugging computer programs.

FACULTY GOALS

FLG1: Acquisition and internalization of knowledge of the programme discipline

FLG2: Application and integration of knowledge

FLG3: Inculcating professionalism

FLG4: Developing global outlook

FLG5: Mastering communication skills

FLG6: Cultivating leadership

COURSE LEARNING OUTCOMES

Course Learning Outcomes	Aligned Faculty Learning Goals (FLGs)
CLO1. Understand the basic features of Excel spreadsheet functions.	FLG 1
CLO2. Analyze and provide optimal solutions for the financial problems related to firms' cash flows, operations, and financial leverage.	FLG 1, 2, 3, 4, 6
CLO3. Understand the basic features of VBA.	FLG 1, 2, 3, 4, 6
CLO4. Understand simulation methods using spreadsheet and VBA and their application in financial models	FLG 1, 2, 3, 4, 6
CLO5. Analyze and assess the fair values of various securities including stocks and bonds	FLG 1, 2, 3, 4, 6
CLO6. Understand the pricing tools for European and American options, including Black-Scholes option formula and binomial trees.	FLG 1, 2, 3, 4, 6

COURSE TEACHING AND LEARNING ACTIVITIES

Course Teaching and Learning Activities	Expected contact hour	Study Load (% of study)
T&L1. Lectures	36 hours	27.27%
T&L2. Assignments	36 hours	27.27%
T&L3. Tutorials	12 hours	9.09%
T&L4. Self-study	48 hours	36.36%
Total	132 hours	100%

Assessment Methods	Brief Description (Optional)	Weight	Aligned Course Learning Outcomes
A1. Assignment(s)	Four assignments	40%	CLO1, CLO2, CLO3, CLO4, CLO5, CLO6
A2. Class/Tutorial Participation		10%	CLO1, CLO2, CLO3, CLO4, CLO5, CLO6
A3. Final Exam	Final exam will be open-book, computer-based exam.	50%	CLO1, CLO2, CLO3, CLO4, CLO5, CLO6
	Total	100%	

STANDARDS FOR ASSESSMENT

Course Grade Descriptors

A+, A, A-	Exhibited high level of understanding of the course materials through dedicated participations, completion of all assignments with almost perfect scores, and excellent performance in final examination.
B+, B, B-	Exhibited reasonably high level of understanding of the course materials through full participations, completion of all assignments with good scores, and good performance in final examination.
C+, C, C-	Exhibited fair level of understanding of the course materials through satisfactory participations, completion of most assignments with acceptable scores, and acceptable performance in final examination.
D+, D	Exhibited limited level of understanding of the course materials through limited participations, completion of only a part of assignments with acceptable scores, and acceptable performance in final examination.
F	Exhibited low level of understanding of the course materials through rare participations, completion of only a part of assignments with unacceptable scores, and poor performance in final examination.

Assessment Rubrics for Each Assessment (same as course grade descriptors)

COURSE CONTENT AND TENTATIVE TEACHING SCHEDULE

Topic 1 (Week 1-3)	Introduction to VBA
Topic 2 (Week 4)	Corporate finance – Financial statement analysis with spreadsheet
Topic 3 (Week 5-8)	Stock pricing – Stock and index returns; – Capital allocation and portfolio theory; – CAPM and multifactor models; – Introduction to Monte Carlo Methods – Simulating stock returns and prices using Excel and VBA; – Bootstrapping methods in stock simulation
Topic 4 (Week 9-11)	Equity option pricing using Excel and VBA – Basic option strategy and payoff structure – Black-Scholes model – Binomial option pricing – Greeks parameters – Implied volatility – Monte Carlo simulation in option pricing (optional)

REQUIRED/RECOMMENDED READINGS & ONLINE MATERIALS (e.g. journals, textbooks, website addresses etc.)

Required readings:

1. Lecture Notes prepared by the instructor, which will be made available on Moodle

Recommended readings:

1. Financial Modeling, Simon Benninga, 4th edition, published by The MIT Press. 2014
2. Financial Analysis and Modeling: Using Excel and VBA, Chandan Sengupta, 2nd edition, published by Wiley. 2009

MEANS/PROCESSES FOR STUDENT FEEDBACK ON COURSE

- ○ conducting mid-term survey in additional to SETL around the end of the semester
- ○ Online response via Moodle site
- ☑ Others: Course Evaluation at the end of the course (please specify)

COURSE POLICY (e.g. plagiarism, academic honesty, attendance, etc.)

Class Conduct

Students are required to attend all classes on time. If you miss a class, it is entirely your responsibility for what you have missed. In case you have to leave the class early, please inform the instructor beforehand and leave quietly.

No use of mobile phone or chatting is allowed when the class is in session. Remember to turn off or mute the phone before each session. The instructor has the discretion to give penalty in case of class misconduct.

Respect your instructors and your fellow students. Be considerate to others.

Special Examinations

Please be reminded that student enquiries and applications for special examinations should be forwarded to the Faculty Office to be handled in a formal and consistent manner. The Faculty and the Chief Examiner may approach individual instructors for their recommendation if necessary. Controversial cases may need to be further discussed in the Internal Examiners' meeting and the Board of Examiners meeting.

In general, special examinations are not granted to students taking up summer internships. Teachers should advise their students to avoid starting their internships before the end of the examination period.

By default, special examinations would be approved:

(1) if incoming/outgoing exchange students have time clash with the next academic semesters in their home/host universities;

(2) due to compassionate reasons; and

(3) on extraordinary medical situation.

Academic Dishonesty

The University Regulations on academic dishonesty will be strictly enforced! Please check the University Statement on plagiarism on the web: http://www.hku.hk/plagiarism/

ADDITIONAL COURSE INFORMATION (e.g. e-learning platforms & materials, penalty for late assignments, etc.)

Final exam: Final exam will be open-book, computer-based exam.

Four assignments: Due dates and times for assignments are FINAL. Late submission of assignments will not be accepted.

Announcements, assignments, and lecture slides will be posted on the course MOODLE website. Hard copy of lecture slides will not be provided.

Teaching assistants will offer weekly tutorials to review lecture materials, assignment solutions, and discuss supplementary topics.

Participation: Lectures and tutorials will take attendance from the third week (the week of September 13, 2021).