

**THE UNIVERSITY OF HONG KONG  
FACULTY OF BUSINESS AND ECONOMICS**

**ECON3283 ECONOMIC FORECASTING**

**GENERAL INFORMATION**

Instructor: K. S. Maurice TSE

Email: ktse@hku.hk

Office: KKL 919

Phone: 28578636

Consultation times: Tuesday 10am-12noon; Thursday 10am-12noon

Tutor:

Pre-requisites: STAT2603

Course Website:

Other important details:

**COURSE DESCRIPTION**

This course covers essential techniques for analyzing time-oriented economic data and forecasting the future values of a time series. Topics include stochastic process and times series, regression analysis and forecasting, smoothing, autoregressive integrated moving average models, multivariate times series, forecasting volatility as well as financial application of time varying volatility. This course will use Excel heavily for constructing and testing for univariate ARIMA and GARCH-type forecasting models.

**COURSE OBJECTIVES**

*This course aims to:*

1. To provide a thorough understanding of basic forecasting methods in economics and finance
2. To develop hands-on knowledge and experience in economic and financial forecasting

**FACULTY GOALS**

Goal 1: Acquisition and internalization of knowledge of the programme discipline

Goal 2: Application and integration of knowledge

Goal 3: Inculcating professionalism

Goal 4: Developing global outlook

Goal 5: Mastering communication skills

Goal 6: Cultivating leadership

<b>COURSE LEARNING OUTCOMES</b>				
<b>Course Learning Outcomes</b>		<b>Aligned Faculty Goals</b>		
CLO1: Students will be able to perform forecasting by collecting and critically analyzing time series data, and applying the appropriate model for generating out-of-sample forecast.		Goal 1, 2, 3, 4, 5, 6		
CLO2: Students will be able to evaluate the limitations of different forecasting methods and their potential fixes				
CLO3: Students will be able to present and communicate forecasting results with a professional forecasting report				
<b>COURSE TEACHING AND LEARNING ACTIVITIES</b>				
<b>Course Teaching and Learning Activities</b>		<b>Expected contact hour</b>	<b>Study Load (% of study)</b>	
T&L1. Lectures		36	30	
T&L2. Tutorial Sessions		12	10	
T&L2. Four Individual Assignments		12	10	
T&L3. Stock Forecast with Presentation		30	25	
T&L3. Self-study		30	25	
Total		120	100%	
<b>Assessment Methods</b>		<b>Brief Description (Optional)</b>	<b>Weight</b>	<b>Aligned Course Learning Outcomes</b>
A1. Tutorial Participation			10%	CLO 1, 2, 3
A2. Individual Assignments			20%	CLO 1, 2, 3
A4. Stock Forecast with Presentation			20%	CLO 1, 2, 3
A5. Final Exam			50%	CLO 1, 2, 3
Total			100%	

**STANDARDS FOR ASSESSMENT****Course Grade Descriptors**

A+, A, A-	<ul style="list-style-type: none"> <li>All aspects were addressed and researched in great depth.</li> <li>Demonstrates a clear understanding of and the ability to apply and theory, concepts and issues relating to the topic.</li> <li>All aspects conform to a high academic / professional standard</li> </ul>
B+, B, B-	<ul style="list-style-type: none"> <li>Most aspects were addressed and researched in depth.</li> <li>Demonstrates a good understanding and some application of the theory and issues relating to the topic.</li> <li>Most aspects conform to a high academic / professional standard.</li> </ul>
C+, C, C-	<ul style="list-style-type: none"> <li>Most aspects were addressed and researched adequately.</li> <li>Demonstrates a good understanding of the theory, concepts and issues relating to the topic but limited application relating to the topic.</li> <li>Most aspects conform to an acceptable academic / professional standard.</li> </ul>
D+, D	<ul style="list-style-type: none"> <li>Basic aspects were addressed and researched adequately.</li> <li>Demonstrates mainly description, showing basic understanding of the topic but no application.</li> <li>Limited aspects conform to academic / professional standards</li> </ul>
F	<ul style="list-style-type: none"> <li>Basic aspects were superficial, inadequate or absent.</li> <li>Demonstrates limited understanding of the topic and draws conclusions unrelated to the topic.</li> <li>The written work is not of an academic / professional standard</li> </ul>

**Assessment Rubrics for Each Assessment** (Please provide us the details in a separate file if the space here is not enough)

Assignments: While the detailed assessment rubric may differ slightly across assignments, the criteria of assessment can be broadly divided into two aspects: (1) Statistical Analysis (60%) and (2) Clarity/Readability (40%)

Stock Forecast Report and Presentation: Students are required to produce one-step-ahead forecast of 10 stocks for approximately 10 trading days. Performance will be assessed based on (1) choice of model with justification, (2) forecast accuracy using the model, (3) ability to summarize the results in a professional report, and (4) presentation of the forecast results in a professional manner.

**COURSE CONTENT AND TENTATIVE TEACHING SCHEDULE**

<b>Topic</b>	<b>Readings</b>
Introduction	Lecture notes
Statistical Background for Forecasting	Lecture notes
Regression Analysis and Forecasting	Lecture notes
Regression Analysis and Forecasting	
Exponential Smoothing	Lecture notes
Identification and Estimation of ARIMA Models	Lecture notes
Forecasting with ARIMA Processes	Lecture notes
Models for Seasonal Time Series	Lecture notes
Multivariate Time Series Models	Lecture notes
Forecasting Volatility: ARCH and GARCH Models	Lecture notes
Forecasting Volatility: ARCH and GARCH Models	
Financial Applications of Time Varying Volatility	Lecture notes
Presentation of Forecast Results and Review	Lecture notes

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

**Strongly Recommended Textbook and Software**

- Introductory Econometrics for Finance, Chris Brooks, Cambridge University Press, 3<sup>rd</sup> edition
- Stata and Excel

**MEANS/PROCESSES FOR STUDENT FEEDBACK ON COURSE**

- conducting mid-term survey in addition to SETL around the end of the semester
- Online response via Moodle site
- Others: \_\_\_\_\_ (please specify)

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

**Academic Honesty and Integrity**

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

Cheating or plagiarism of any kind would result in an automatic F grade for the course plus strict enforcement of all Faculty and/or University regulations regarding such behavior. Incident(s) of academic dishonesty will NOT be tolerated.

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