VICTORIA

UNIVERSITY OF WELLINGTON

School of Economics and Finance

MMPE 503: Economic Relationships in an Empirical Context

MMAF 524: Financial Econometrics

Trimester 2 2015

COURSE OUTLINE

Name and Contact Details

Lecturer:	Yiğit Sağlam (Coordinator, Lecturer)	Debbie Turner (Senior Administrator)
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Office Hours:	Thursday from 09:30am to 12:30pm	

Trimester Dates

Teaching Period:	Monday 13th July	- Friday 16th October
Study Period:	Monday 19th October	- Thursday 22nd October
Examination Period:	Friday 23rd October	- Saturday 14th November (inclusive)

Withdrawal from Course

1. Your fees will be refunded if you withdraw from this course on or before Friday 24th July 2015.

2. The standard last date for withdrawal from this course is Friday 25th September 2015. After this date, students forced to withdraw by circumstances beyond their control must apply for permission on an *Application for Associate Dean's Permission to Withdraw Late* including supporting documentation. The application form is available from either of the Faculty's Student Customer Service Desks or online.

Course Delivery

The course material will be delivered via one three hour block per week for the 12 teaching weeks. It is essential that you have access to Blackboard, and check it frequently as new information, content and readings will be posted often.

Lecture Times and Room Numbers

Lectures: Classes will be held on Wednesdays (during the teaching period) from 09:30am to 12:20pm in Railway West Wing RWW413.

Tutorials: In most weeks, we will allocate the first two hours to lectures, while the last hour will be used as a tutorial session. During the tutorial sessions, we will put the methods covered in lectures into practice.

Group Work

There is no group work outside of the block release.

Expected Workload

The **expected workload** is a total of 200 hours. In addition to the lecture times, this might include tutorial preparation of 32 hours, reviewing material for the test and exam of 100 hours and working on assignments for 32 hours.

Prescription

An operational course on financial econometrics that reviews some of the existing literature and investigates some current research areas. The course applies the theory of allowing participants to work through a number of questions with a range of financial data sets

Course Learning Objectives

Students should be able to:

1. apply quantitative tools to model, estimate and forecast financial variables,

2. analyze the statistical properties of financial prices and returns,

3. evaluate models of risk based on the Capital Asset Pricing Model and variants assuming non-normal return processes,

4. analyze recent advances in unit root and co-integration methods in modeling the term structure of interest rates and asset price bubbles,

5. describe the strengths and limitations of alternative quantitative methods by reproducing existing results using computer skills and mathematical modeling techniques, in conjunction with a range of financial data set,

6. perform sensitivity analyses on proposed models, which should include the application of alternative distributional specifications to model risk.

Course Content

This course is concerned with the application of quantitative tools to model, estimate and forecast financial variables. Topics considered include: the analysis of the properties of financial data with an emphasis on non-normality and non-stationarity; the application of estimation methods including unit roots and co-integration, to the rational valuation model of share prices; the application of the GARCH class of models to estimate volatility and to test the capital asset pricing model.

Readings

Lecture notes, announcements, assignment questions and other information will be posted on the blackboard website: http://blackboard.vuw.ac.nz.

The following textbook is required for this course:

> Ruey S. Tsay, *An Introduction to Analysis of Financial Data with R*, John Wiley & Sons, 416 pages, October 2012
> ISBN-10: 0470890819, ISBN-13: 978-0470890813.

The following textbooks are also useful resources:

> Campbell, J.Y., A.W. Lo, and A.C. MacKinlay, *The Econometrics of Financial Markets*, Princeton University Press, 1997.
> Cochrane, J.H., *Asset Pricing*, Princeton University Press, 2001.
> Taylor, Stephen J., *Asset Price Dynamics, Volatility, and Prediction*, Princeton University Press, 2005.
> Ait-Sahalia, Y., and Hansen, L., *Handbook of Financial Econometrics*, Elsevier.

The university library has several copies available for interested readers.

Materials and Equipment

To implement the theoretical development of forecasting, we will use R to practice forecasting techniques. R is an open-source software, so students can download and install it to their own computer. It is also installed and ready-to-use in the computer classrooms located in the Railway West Wing.

Silent non-programmable calculators are permitted in the test and final examination.

Assessment Requirements

The Assessment Handbook will apply to all VUW courses: see
http://www.victoria.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf.

If you cannot complete an assignment or sit a test or examination, refer to:
www.victoria.ac.nz/home/study/exams-and-assessments/aegrotat

Type	CLOs	Due/Test date	Notes	Weight
Assignment 1:	1–4	August 12th	due 5pm	20%
Assignment 2:	1–6	October 14th	due 5pm	20%
Test 1:	1–6	August 19th	2 hours, at 10am	30%
Final Exam:	1–6	TBA	2 hours	30%

The assessment requirements and the corresponding weights are the same for both MMAF524 and MMPE503 courses. However, the content of the assessment items may be different given the aim of the courses. Please bring your calculator for the tests. All assessment marks (except for the exam) will be published on Blackboard via My Grades.

Examinations

Students who enrol in courses with examinations are obliged to attend an examination at the University at any time during the formal examination period. The final examination for this course will be scheduled at some time during the following period:
Friday 23th October - Saturday 14th November (inclusive).

Penalties

Students are expected to attend classes and participate in class discussions. At the margin, for assessment purposes, consideration will be given to your contribution to class discussion and activities.

Late assignments are discounted by 10% for each day after the due date. Assignments submitted a week after the due date will not be accepted.

Use of Turnitin

Student work provided for assessment in this course may be checked for academic integrity by the electronic search engine http://www.turnitin.com. Turnitin is an on-line plagiarism prevention tool which compares submitted work with a very large database of existing material. At the discretion of the Head of School, handwritten work may be copy-typed by the School and submitted to Turnitin. A copy of submitted materials will be retained on behalf of the University for detection of future plagiarism, but access to the full text of submissions will not be made available to any other party.

Mandatory Course Requirements

None.

Communication and Additional Information

Course documents and other information will be available on the course website at
http://blackboard.vuw.ac.nz. Announcements will also be posted there.

Student Feedback

Student feedback on University courses may be found at:
www.cad.vuw.ac.nz/feedback/feedback_display.php.

Link to General Information

For general information about course-related matters, go to:
http://www.victoria.ac.nz/vbs/studenthelp/general-course-information

Note to Students

Your assessed work may also be used for quality assurance purposes, such as to assess the level of achievement of learning objectives as required for accreditation and academic audit. The findings may be used to inform changes aimed at improving the quality of VBS programmes. All material used for such processes will be treated as confidential, and the outcome will not affect your grade for the course.

Intended Schedule

Week	Date	Topic
1	Jul 13–17	Intro, Summary Statistics, and Hypothesis Testing
2	Jul 20–24	Classic Linear Regression Models
3	Jul 27–31	Classic Linear Regression Models (cont.d)
4	Aug 3– 7	Forecasting and ARIMA Models
5	**Aug 12** Aug 10–14	**ASSIGNMENT 1 is due 5pm** Forecasting and ARIMA Models(cont.d)
6	**Aug 19**	**TEST 1, 2 hours, at 10:00am**
Mid-Semester Break (Aug 22–Sep 6)		
7	Sep 7–11	Panel Data: Fixed vs. Random Effects Models
8	Sep 14–18	Difference-in-Differences Estimation
9	Sep 31–25	Unit Roots and Cointegration
10	Sep 28–Oct 2	Volatility Models
11	Oct 5– 9	Nonlinear Models
12	**Oct 14** Oct 12–16	**ASSIGNMENT 2 is due 5pm** Nonlinear Models (cont.d)

Study Break (Oct 19–22)
Examinations (Oct 23–Nov 14), see http://www.victoria.ac.nz/timetables/

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