



FACULTY OF  
BUSINESS AND ECONOMICS

ECON361  
Economic and Business Forecasting

Semester 2, 2010

*Department of Economics*

**MACQUARIE UNIVERSITY  
FACULTY OF BUSINESS AND ECONOMICS  
UNIT OUTLINE**

<b>Unit:</b>	ECON361 Economic and Business Forecasting
<b>Year and Semester:</b>	Semester 2, 2010
<b>Unit Convenor:</b>	Chris Heaton (chris.heaton@mq.edu.au)
<b>Prerequisites:</b>	ECON141 or ECON241; ECON203 or ECON204 or ECON200 or ECON201

Students in this unit should read this unit outline carefully at the start of semester. It contains important information about the unit. If anything in it is unclear, please consult the unit convenor.

## 1 About This Unit

This unit provides an introduction to economic forecasting techniques. The topics covered will usually include smoothing and classical decomposition methods, ARIMA, vector autoregression and leading indicators. The emphasis of the unit is on producing sound solutions to practical forecasting problems, rather than proving theoretical results. The unit material is illustrated with many applications to problems in economics and business and the assignment requires students to produce their own forecasts. Practical work is carried out using a simple statistical software package. The objective of the unit is to produce graduates who understand the nature of forecasting problems and can produce sound forecasts for use in business and economic analysis. ECON361 is a 3 credit point unit.

## 2 Teaching Staff

- Chris Heaton (Unit Convenor and Lecturer) Office: E4A-414, Ph: 9850 9921, email: Chris.Heaton@mq.edu.au

## 3 Classes

- There is a single 2 hour class per week, each week of semester (except for Week 8 which is a public holiday). There is also a 1 hour tutorial class held in weeks 2, 3, 5, 7, 9, 11 and 12. Tests will be held during the tutorial time in weeks 4, 6, 10 and 13.

- Students must enrol in a tutorial class at the start of the semester. Students will not be permitted to change classes at a later date.
- The timetable for classes can be found on the University web site at: <http://www.timetables.mq.edu.au/>

## 4 Required and Recommended Texts and/or Materials

- Students are not required to purchase a textbook for ECON361. A reading list is provided in Section 13 of this outline. A more detailed reading list will be on the unit website, and all references are available via the Library eReserve.
- The main software used in this unit is gretl. The Windows version may be freely downloaded from <http://gretl.sourceforge.net/win32/>. For a Mac version see <http://gretl.sourceforge.net/osx.html>. Linux users should check their repositories (Debian and Ubuntu users can install from standard repos) or download the rpm or source from <http://gretl.sourceforge.net/index.html>.
- The online material used in this unit has been tested on the Firefox 3.6 web browser. Other web browsers may not correctly display all elements of the unit material, and their use is discouraged. Versions of Firefox for several different operating systems may be freely downloaded from <http://www.mozilla.com/en-US/>.
- Some of the equations on the unit website are rendered using the jsMath script. The appearance of these equations may be improved by installing the fonts that are available on the unit website.

## 5 Unit Web Page

The web page for this unit can be found at: [http://www.econ.mq.edu.au/undergraduate\\_programs/economics\\_units/econ361](http://www.econ.mq.edu.au/undergraduate_programs/economics_units/econ361)

## 6 Learning Objectives and Outcomes

- The learning objectives of this unit are:
  - to understand the nature of forecasting and to recognise forecasting problems in practice;
  - to be able to construct forecasts using some standard forecasting models;
  - to be capable of assessing competing forecasting models;

- The learning outcomes of this unit are:
  - the ability to estimate measures of forecast accuracy and rank forecasting models;
  - the ability to seasonally adjust and detrend data;
  - the ability to choose between alternative smoothing models in practice;
  - the ability to implement smoothing models to produce forecasts;
  - the ability to identify, estimate and forecast with ARIMA models;
  - the ability to specify, estimate and forecast with vector autoregressions.
  
- In addition to the discipline-based learning objectives, all academic programs at Macquarie seek to develop students' generic skills in a range of areas. One of the aims of this unit is that students develop their skills in the following:
  - numeracy skills;
  - computing skills;
  - critical, analytical and integrative thinking;
  - problem solving and research capability.

## 7 Learning and Teaching Strategy

ECON361 is taught by lectures, set reading, tutorial exercises, class discussion and online discussion. Students are expected to attend lectures, read the relevant material after the lecture, attend tutorial classes, submit tutorial and other exercises regularly, and participate in online discussions and class discussions.

An approximate schedule of topics and tasks is given in Table 1.

## 8 Relationship Between Assessment and Learning Outcomes

Students are required to complete regular tutorial exercises which explore the material which has been covered in the lecture and the reading in the previous week. Answers must be submitted in the tutorial class via the relevant interface in Blackboard.

A list of assessment tasks, their value, and their submission times is presented in Table 2.

Students will sit for a diagnostic test which will assess their command of the assumed knowledge of the unit. Students who perform poorly in this test might be regarded as being at risk of performing poorly in ECON361.

Table 1: Approximate Schedule

<b>Week</b>	<b>Topic</b>	<b>Tutorials/Tests</b>	<b>Homework Due</b>
Week 1	Introduction, Evaluation		
Week 2	Time series decomposition	Tutorial 1	
Week 3	Exponential smoothing	Tutorial 2	
Week 4	Exponential smoothing	Test 1 (diagnostic)	Homework 1 and 2
Week 5	ARIMA	Tutorial 3	Homework 3
Week 6	ARIMA	Test 2	
Week 7	ARIMA	Tutorial 4	
Week 8	Long weekend (no classes)		
Week 9	ARIMA	Tutorial 5	Homework 4
Week 10	Vector autoregression	Test 3	
Week 11	Vector autoregression	Tutorial 6	Homework 5
Week 12	Vector autoregression	Tutorial 7	Homework 6
Week 13		Test 4	

Table 2: List of Assessment Tasks

<b>Task</b>	<b>Value</b>	<b>Due</b>
Tutorial exercises	5% (best 4 out of 7)	Submitted via Blackboard in enrolled tutorial class in weeks 2, 3, 5, 7, 9, 11 and 12
Homework	15%	Submitted via Blackboard by 10am Friday morning in weeks 4, 5, 9, 11, 12
Diagnostic test	5%	Held in enrolled tutorial class in Week 4
Class tests	25% each	Weeks 6, 10 and 13

A practice test for the diagnostic test will be made available. Students will receive marks and feedback for the practice test, and may attempt it multiple times. For the diagnostic test, students will receive a mark, but no feedback. Students will receive marks for each assessment task within a few days of its submission. Feedback will also be provided for tutorial and homework exercises. The tutorial and homework exercises will be similar to the test questions, and students should regard them as preparation for the tests. The purpose of the tests is purely summative. Students will be provided with a mark, but no feedback.

There is no final examination in ECON361.

## 9 Student Availability

Students must be available to attend their tutorial and test at the time in which they are enrolled. They must also submit the homework before the due time. Except in proven cases of significant, unavoidable, unforeseeable

misadventure, students who fail to submit/attend an assessment task will be awarded a mark of zero for that task – but will not be prevented from passing the unit if their overall mark is satisfactory. Students who suffer such a misadventure should consider applying for Special Consideration (see [http://www.mq.edu.au/policy/docs/special\\_consideration/policy.html](http://www.mq.edu.au/policy/docs/special_consideration/policy.html) and [http://www.mq.edu.au/policy/docs/special\\_consideration/procedure.html](http://www.mq.edu.au/policy/docs/special_consideration/procedure.html)). When applying for Special Consideration, students should also forward a copy of their application to the lecturer-in-charge to speed up the processing of the application.

Students considering applying for Special Consideration should consider the following.

- The due date for receipt by the University of an application for Special Consideration is 5pm five calendar days after the due date of the assessment task.
- The University’s Special Consideration Policy lists several circumstances which are not acceptable grounds for Special Consideration.
- Since only the best four out of seven tutorials are counted towards the final grade, to be successful, an application for Special Consideration for a missed tutorial would need to satisfactorily account for the student’s absence at four tutorials.
- Students applying for Special Consideration for a homework task must demonstrate that the disruption to their studies was of at least three consecutive days duration. Multiple submissions of the homework are possible. Accordingly, it is recommended that students initially submit an early draft of their work, with the intention of updating it closer to the submission date.
- For a Special Consideration application to be valid, the student must have been performing satisfactorily in the unit up to the date of the unavoidable disruption. If a student’s work in the unit has previously been unsatisfactory, subsequent unavoidable disruption will not overcome the fact that the earlier work was unsatisfactory. In particular, failure to attend prior tutorial classes, submit prior homework, or to perform satisfactorily in tutorial and homework exercises held prior to the disruption, will render Special Consideration unavailable.
- The outcome of a successful Special Consideration application may be the requirement to sit/resit/submit/resubmit the assessment task, or it may be that the weighting of the assessment tasks is altered for the affected student. The outcome will be decided by the unit convenor in consideration of the particular circumstances of the case.

## 10 Plagiarism

Plagiarism involves using the work of another person and presenting it as one's own. Plagiarism is a serious breach of the University's rules and carries significant penalties. You must read the University's practices and procedures on plagiarism. These can be found in the *Handbook of Undergraduate Studies* or on the web at <http://www.student.mq.edu.au/plagiarism/>. The policies and procedures explain what plagiarism is, how to avoid it, the procedures that will be taken in cases of suspected plagiarism, and the penalties if you are found guilty. Penalties may include a deduction of marks, failure in the unit, and/or referral to the University Discipline Committee.

Students are referred to the University's Academic Honesty Policy ([http://www.mq.edu.au/policy/docs/academic\\_honesty/policy.htm](http://www.mq.edu.au/policy/docs/academic_honesty/policy.htm)).

## 11 Grades

The final grade awarded to each student will be based on their achievements in each of the assessment tasks and using the weights in Table 2. However, since some scaling may occur, it is not possible for students to determine their final grade from their weighted aggregate of marks with certainty. Furthermore, the SNG that is awarded with the grade is indicative of a student's ranking within a particular grade, and is not necessarily equal to the weighted aggregate of marks.

## 12 Student Support Services

Macquarie University provides a range of Academic Student Support Services. Details of these services can be accessed at <http://www.futurestudent.mq.edu.au/undergraduate/AccessingStudentSupport/index.html>.

## 13 Reading List

Each of the following references will be available from the Library eReserve (<http://www.lib.mq.edu.au/borrowing/ereserve.php>) during semester. The reading for each topic will be announced in lectures.

Anton, H. (1987) *Elementary Linear Algebra* (5th ed.) Wiley, p. 23-31.

Asteriou, D. and Hall, S.G. (2007) *Applied Econometrics: A Modern Approach* (rev. ed.) Palgrave-MacMillan p.229-247, p.278-286.

Bowerman, B. L., O'Connell, R. T. and Koehler, A. B. (2005) *Forecasting, Time Series, and Regression* (4th ed.) Thomson-Brooks-Cole p.12-18, p.25-26, p.340-341, p.345-400.

Brooks, C. (2002) *Introductory Econometrics for Finance*, CUP, p.330-340.

Diebold, F. X. (2007) *Elements of Forecasting* (4th ed.) Thomson-South-Western p.260-264, p.112-136.

Makridakis, S. Wheelwright, S. C. and Hyndman, R. J. (1998) *Forecasting: Methods and Applications* (3rd ed.) Wiley p.311-387.

Verbeek, M. (2008) *A Guide to Modern Econometrics* (3rd ed.) Wiley p.269-282, p.295-307.

Wilson, J. H. and Keating, B. (1998) *Business Forecasting* (3rd ed.) Irwin-McGraw-Hill p. 259-279, p.293-298.