UNSW Business School

School of Economics

ECON5248
Business Forecasting

Course Outline
Semester 1, 2017

Part A: Course-specific Information

Students are also expected to have read and be familiar with Part B Supplement to All Course Outlines. This contains Policies on Student Responsibilities and Support, Including Special Consideration, Plagiarism and Key Dates. It also contains the BUSINESS SCHOOL PROGRAM LEARNING GOALS.

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1   STAFF CONTACT DETAILS

Lecturer-in-charge: Dr Minxian Yang
Room: UNSW Business School 452
Phone No: 9385 3353
Email: m.yang@unsw.edu.au
Consultation Times: 17-18, Tuesdays

1.1   Communication with Lecturer

You should feel free to contact your lecturer about any academic matter. However, for efficiency, all enquiries about the subject material should be made at lectures or tutorials or during consultation time.

2   COURSE DETAILS

2.1   Teaching Times and Locations
Lecture (Weeks 1-13): Tuesday 6-8pm, Business School 205
As Tuesday 25 is the Anzac Day public holiday, there will be no lecture and no tutorial on that day.

Tutorial (Weeks 1-13): Tuesday 8pm, BUS205 or Quadrangle G021
Students should read relevant materials and attempt the tutorial questions before attending the tutorial classes.

2.2   Units of Credit

The course is worth 6 units of credit.

There is no parallel teaching in this course.

2.3   Summary of Course

This course covers the use of econometric and statistical techniques relevant to forecasting in a business environment and computer implementation of these methods. Building and evaluating short-term forecasting models with time-series-analysis techniques will be the focus. Applications will be emphasised in this non-specialist course. A good understanding of these issues will allow students to select and use the most appropriate methods and models to analyse historical data with the aim of statistically predicting future outcomes.

Students will learn to practically analyse time series data via EViews, which is a popular software package that implements relevant econometric/statistical methods.

2.4   Aims and Relationship to Other Courses

This course is offered as one of the data analysis options in the MCom degree. Building on basic theories and knowledge outlined in the COMM5005 Quantitative Methods for Business course description, this course aims to provide the elementary principles and techniques of time series analysis and business forecasting, emphasising practical data analysis. If you are planning to enrol in this course you need to have completed, at a minimum, a course equivalent to COMM5005.

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2.5   Student Learning Outcomes

The Course Learning Outcomes are what you should be able to DO by the end of this course if you participate fully in learning activities and successfully complete the assessment items.

The Learning Outcomes in this course also help you to achieve some of the overall Program Learning Goals and Outcomes for all postgraduate coursework students in the Business School. Program Learning Goals are what we want you to BE or HAVE by the time you successfully complete your degree. You demonstrate this by achieving specific Program Learning Outcomes - what you are able to DO by the end of your degree.

The following table shows how your Course Learning Outcomes relate to the overall Program Learning Goals and Outcomes, and indicates where these are assessed:

Program Learning Goals and Outcomes		Course Learning Outcomes	Course Assessment Item
This course helps you to achieve the following learning goals		*On successful completion of the course, you should be able to:*	*This learning outcome will be assessed in the following items:*
1	Knowledge	Explain various notions/concepts/principles in time series analysis and forecasting.	• Tutorial discussion • Course project • In-tutorial Tests • Exam
2	Critical thinking and problem solving	Use the standard techniques of time series analysis to analyse real data and interpret estimation and forecasting results.	• Tutorial Problems • Course project • In-tutorial Tests • Exam
3a	Written communication	Construct written work which is logically and professionally presented.	• Course project • In-tutorial Tests • Exam
3b	Oral communication	Communicate ideas in a succinct and clear manner.	Not specifically assessed
4	Teamwork	Work collaboratively to complete a task.	• Course project.
5a.	Ethical, environmental and sustainability considerations	Identify and assess environmental and sustainability considerations in problems in international macroeconomics.	Not specifically assessed
5b.	Social and cultural awareness	Not specifically itemed in this course.	Not specifically assessed.

3 LEARNING AND TEACHING ACTIVITIES

3.1 Approach to Learning and Teaching in the Course

The philosophy underpinning this course and its Teaching and Learning Strategies are based on Guidelines on Learning that Inform Teaching at UNSW. These guidelines may be viewed at: www.guidelinesonlearning.unsw.edu.au. Specifically, the lectures, tutorials and assessment have been designed to appropriately challenge students and support the achievement of the desired learning outcomes. A climate of inquiry and dialogue is encouraged between students and teachers and among students (in and out of class). The lecturers and tutors aim to provide meaningful and timely feedback to students to improve learning outcome.

3.2 Learning Activities and Teaching Strategies

The examinable content of the course is defined by the references given in the Lecture Schedule, the content of Lectures, and the content of the Tutorial Program.

Lectures

The purpose of lectures is to provide a logical structure for the topics that make up the course; to emphasize the important principles/concepts/methods of each topic; and to provide relevant examples to which the principles/concepts/methods are applied.

Tutorials

The Tutorial Program begins in Week 2 and completes in Week 13. They are an integral part of the subject. Tutorial presentations, discussions, solutions to problems are designed to help students deepen their understanding and practise learnt material.

Out-of-Class Study

While students may have preferred individual learning strategies, it is important to note that **most learning will be achieved outside of class time**. Lectures can only provide a structure to assist your study, and tutorial time is limited.

An "ideal" strategy (on which the provision of the course materials is based) might include:

1. Read the relevant chapter(s) of the text and lecture slides **before the lecture.** This will give you a general idea of the topic area.
2. Attend lectures. Here the context of the topic in the course and the important elements of the topic are identified. The relevance of the topic is explained.
3. Attempt tutorial questions **before attending the tutorial class**. This helps you identify issues that can be discussed and resolved in the tutorial class.

As EViews is only available in Business School computer labs, we have booked the computer labs for practice, tutorial exercises and the Course Project. The details will soon be available on Moodle.

Mondays 7-8pm in Quad G021
Tuesday 9-10pm in Quad G021
Fridays 5-6pm in Quad G021

4   ASSESSMENT

4.1   Formal Requirements

To be eligible for a passing grade in this course, students must:
   a)   Achieve a composite mark of at least 50 per cent;
AND
   b)   Satisfactorily complete all assessment tasks or submit appropriate documentation relating to your failure to complete a task to the Lecturer in Charge.

4.2   Assessment Details

Assessment Tasks	Weight	Length	Due Date
In-tutorial Tests	20%	15 minutes each	Weeks 5 and 9, 10% each
Tutorial participation and discussion	3%	See 4.3 below	See 4.3 below
Course Project	17%	no more than 8 pages	Tut time, Week 12
Final Exam	60%	2 hours	University Exam Period
Total	100%		

Work commitment, holiday or travel plans are NOT valid excuses for failing to complete any of the assessment tasks.

4.3   Tutorial Participation and Discussion

Marks Guide for Tutorial Participation

0	Below 80% of attendance as required by UNSW and Business School rules. [Attendance at 9 of 11 tutorials will be deemed as meeting the requirement. Students must sign on by 20 minutes from start of tutorial to qualify as 'in attendance'. Signing on for another student will be treated as misconduct.]
1	Has satisfied the attendance requirement but has not contributed to class discussion.
2-3	Has satisfied the attendance requirement and contributed to class discussion in relevant and constructive ways.

4.4   In-tutorial tests

There will be 2 written tutorial tests in Weeks 5 and 9. Students will have 15 minutes to complete each test. The tests will cover learned materials up to Week 4 and Week 7 respectively.

Students must sit the tutorial tests in the tutorial group to which they have been allocated. No supplementary in-tutorial tests will be offered. Students who do not attend and do not have adequate reason will be awarded a mark of zero. Documentary evidence for an

absence (e.g. medical certificate) must be provided to the Lecturer-in-charge. If the absence is approved, the student will have their final mark re-weighted according to the weight of the missed piece of assessment. Regardless, absence can only be approved for one of the in-tutorial tests.

Work commitments, holiday or travel plans are NOT valid excuses for failing to sit the in-tutorial tests.

4.5 Tutorial discussion questions

When students are required to discuss questions in tutorials, the outcome will be incorporated in the marks in 4.3 above.

4.6 Course Project Assessment and Format

The Course Project will be a forecasting exercise with real data. More details, including the format, marking criteria and submission procedure, will be given in a separate file to be posted in Course Website. All assignments will be checked for plagiarism, which will lead to a mark of zero. Teamwork for this project will also be assessed.

4.7 Late Submission of Course Project

20% of the value of the assignment will be deducted for each day (24 hours). Assignments submitted more than five days late will not be marked. **It is your responsibility to hand the assignment *to your lecturer*. Staff members other than your lecturer will not accept your assignment**.

Work commitments, holiday or travel plans are NOT valid excuses for failing to submit your assignment on time.

4.8 When Sickness Affects Your Submission

If you are unable to hand in your assignment or course project because of sickness, you must apply for special consideration. Applications for special consideration must be **lodged online through myUNSW within 3 working days of the assessment** (Log into myUNSW and go to My Student Profile tab > My Student Services channel > Online Services > Special Consideration). Then submit the originals or certified copies of your supporting documentation and a completed Professional Authority form (pdf - download here) to Student Central.

If approved your final exam will be re-weighted according to the missed submission. Note that the 50% rule at 4.1 (c) applies to the re-weighted final exam. Work commitments, holiday or travel plans are NOT valid excuses for failing to submit your assignments or course project.

4.9 Final Exam Format

The final exam will cover the entire course, consisting of short-answer and/or multiple-choice type questions. All material covered in the lectures and tutorial program, as outlined in 3.2 above, is examinable. The skills of using software EViews will not be tested in the final exam.

4.10 Quality Assurance

The Business School is actively monitoring student learning and quality of the student experience in all its programs. A random selection of completed assessment tasks may be used for quality assurance, such as to determine the extent to which program learning goals are being achieved. The information is required for accreditation purposes, and aggregated findings will be used to inform changes aimed at improving the quality of Business School programs. All material used for such processes will be treated as confidential and will not be related to course grades.

5   COURSE EVALUATION AND DEVELOPMENT

Each year feedback is sought from students and other stakeholders about the courses offered in the School and continual improvements are made based on this feedback. UNSW's myExperience Survey Tool is one of the ways in which student evaluative feedback is gathered. You are strongly encouraged to take part in the feedback process.

6   COURSE RESOURCES

The website for this course is on Moodle: http://moodle.telt.unsw.edu.au

The textbook for this course is:

- Diebold, F.X. (2007), Elements of Forecasting, 4th Edition, Thomson South-Western (downloadable from the course website)

Other useful readings:

- Rob J Hyndman and George Athanasopoulos (2013), Forecasting: Principles and Practice, online access (https://www.otexts.org/fpp)

- Newbold, P. and T. Bos (1994), Introductory Business and Economic Forecasting, 2nd Edition, International Thomson Publishing

- Brockwell, P.J. and R.A. Davis (1996), Introduction to Time Series and Forecasting, Springer-Verlag

- Wilson, J.H. and B. Keating (2007), Business Forecasting, 5th Edition, McGraw-Hill/Irwin

7 LECTURE SCHEDULE

A set of **Lecture Slides** (Slides) and a set of **Notes and Tutorials Exercises** (Notes) will be put on the Course Website.

Week 1, 28/02: Introduction, Forecasting Environment, Statistical Review
1. Read Textbook Ch1, Ch3 (do this before Week 1).
2. Slides-01, Slides-02, Notes p2-5, Textbook Ch2.

Week 2, 07/03: Statistical Graphics, Classical Decomposition of a Times Series
1. Slides-03, Slides-04.
2. Textbook Ch5

Week 3, 14/03: Trend Model and Forecasts, Smoothing, Seasonality
1. Slides-04.
2. Textbook Ch5, Ch13.4, Ch6

Week 4, 21/03: Joint Trend and Seasonality Model, Cycles
1. Slides-04.
2. Textbook Ch6

Week 5, 28/03: Characterising Cycles
1. Slides-05.
2. Textbook Ch7

Week 6, 04/04: Characterising Cycles, ARMA Models for Cycles
1. Slides-05, Slides-06.
2. Textbook Ch7, Ch8

Week 7, 11/04: Estimation of ARMA models, Box-Jenkins Methodology
1. Slides-06, Slides-07.
2. Textbook Ch8

Week 9, 02/05: Unit-root Test, Forecasting Cycles (No lecture/tutorial in Week 8)
1. Slides-07, Slides-08.
2. Textbook Ch8, Ch9

Week 10, 09/05: Forecasting with Trend, Seasonality and Cycle, Model Stability
1. Slides -09.
2. Textbook Ch10

Week 11, 16/05: Evaluating and Combining Forecasts
1. Slides-10.
2. Textbook Ch12

Week 12, 23/05: Vector Autoregression (VAR)
1. Slides-11.
2. Textbook Ch11.6-11.9

Weeks 13, 30/05: Finish Unfinished, Brief Review
1. Slides-11.
2. Textbook Ch11.6-11.9

Note: The above schedule is an approximation. Its order and contents may vary.

8 TUTORIAL PROGRAM

This is indicated in the **Tutorials Exercises**. Many tutorial exercises require the use of an econometric software package. EViews is recommended for this purpose. EViews is available in all Business School computer labs.

We have booked the lab G021 for Mon 19-20, Tue 21-22 and Frid 17-18 for students to practice Eviews or to complete their exercises or project.