ECON5248
Business Forecasting

Course Outline
Semester 1, 2015

Part A: Course-specific Information

Students are also expected to have read and be familiar with Part B Supplement to All Postgraduate 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.
1 STAFF CONTACT DETAILS
Lecturer-in-charge: Gautam Gangopadhyay
Room:  UNSW Business School 409
Phone No:  9385 8173
Email:   g.gangopadhyay@unsw.edu.au
Consultation Times:  2.30pm- 5.30pm Wednesdays (or by appointment)

Tutor
Gautam Gangopadhyay:  g.gangopadhyay@unsw.edu.au

1.1 Communication with Lecturer/Tutor
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 1-12): Wed 6-8pm, Chemical Sciences M10

Tutorials (Weeks 2-13): Wed 8.15-9.15pm Quad 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 introduces econometric and time series demand modelling techniques analysis and forecasting that are often adopted in a business environment particularly by large utilities and capital intensive industries. This subject requires econometric /statistical software for solving problems in tutorial classes and for the major project work to be undertaken for successful completion of this course. The preferred software is EViews. Eviews is only available in the UNSW Business School computer labs. It is recommended that the students purchase EViews – Version 8 online (www.eviews.com).The cost of the student version of EViews is US$39.95.

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.
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:

<table>
<thead>
<tr>
<th>Program Learning Goals and Outcomes</th>
<th>Course Learning Outcomes</th>
<th>Course Assessment Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>This course helps you to achieve the following learning goals</td>
<td>On successful completion of the course, you should be able to:</td>
<td>This learning outcome will be assessed in the following items:</td>
</tr>
</tbody>
</table>
| 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  
• Exam |
| 3b Oral communication | Communicate ideas in a succinct and clear manner. | • Tutorial discussion |
| 4 Teamwork | Work collaboratively to complete a task. | Not specifically assessed. |
| 5a Ethical, environmental and sustainability considerations | Identify and assess environmental and sustainability considerations in problems in international macroeconomics. | • Exam  
• Course project |
| 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:

1. a flavour of how short and long term forecasting tasks are undertaken in the real world of business;
2. the tools that are available to formulate demand models and the assumptions that underpin these models in relation to input data, macroeconomic and demographic settings and the drivers of demands;
3. approaches to construction of reliable and robust (based on sound demand modelling methodology) forecasts that meet the best practice standards and expectations of the stakeholders; and
4. approaches to assess the forecasting risks and to undertake sensitivity analysis.

Tutorials
The Tutorial Program begins in Week 2 and completes in Week 13. Tutorial presentations, discussions, solutions to problems are designed to help students deepen their understanding and practise learnt material.

Out-of-Class Study
Group discussion among students, sharing real life experience and team work in relation to the use of EViews software are encouraged. However, individual students are required to learn the forecasting techniques and associated theories and gain skills in the usage of the EViews software.
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 clarified or resolved in the tutorial class.

As EViews is only available in ABS computer labs, we have booked the following computer labs for practice, tutorial exercises and the Course Project:

Wednesdays 1-2pm in Quad G021
Thursdays 1-2pm in Mathews 211

OR

Share labs with ECON2209 Business Forecasting
Mondays 12 - 2pm in Mathews 211
Fridays 9-12 noon in Mathews 211

4 ASSESSMENT

4.1 Formal Requirements
To be eligible for a passing grade in this course, students must:

a) Achieve an overall 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.
AND
c) Sit for the (closed book) final examination and obtain satisfactory marks in the final examination

<table>
<thead>
<tr>
<th>Assessment Tasks</th>
<th>Weight</th>
<th>Length</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>In-tutorial Tests</td>
<td>20%</td>
<td>30 minutes</td>
<td>15 April and 13 May 2015</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10% each</td>
</tr>
<tr>
<td>Tutorial participation</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and discussion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course Project</td>
<td>15%</td>
<td>no more than 10 pages</td>
<td>Tut time, 3 June 2015</td>
</tr>
<tr>
<td>Final Exam-closed book</td>
<td>60%</td>
<td>2 hours</td>
<td>University Exam Period</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Work commitment, holiday or travel plans are NOT valid excuses for failing to complete any of the assessment tasks.
4.2 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.]
2 Has satisfied the attendance requirement but has not contributed to class discussion.
3-5 Has satisfied the attendance requirement and contributed to class discussion in relevant and constructive ways.

4.3 In-tutorial tests
There will be two written closed book tutorial tests in this course. The first tutorial test will be on 15 April. The second tutorial test will be on 13 May. Students will have 30 minutes to complete each test. The tests will cover learned materials up to 1 April and 6 May 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 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 commitment, holiday or travel plans are NOT valid excuses for failing to sit the in-tutorial tests.

4.4 Tutorial discussion questions
When students are required to discuss questions in tutorials, the outcome will be incorporated in the marks in 4.2 above.

4.5 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 and discussed in the lecture classes. All assignments will be checked for plagiarism, which will lead to a mark of zero.

4.6 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 tutor. Staff members other than your tutor will not accept your assignment.

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

4.7 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 commitment, holiday or travel plans are NOT valid excuses for failing to submit your assignments or course project.

4.8 Final Exam Format
The final exam will cover the entire course. All topics covered in the lectures and tutorial program, as outlined in 3.2 above, are examinable.

4.9 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 Course and Teaching Evaluation and Improvement (CATEI) Process 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 UNSW Moodle at: http://moodle.telt.unsw.edu.au

The following are the textbooks for this course:

This book is downloadable. Click the link: http://www.ssc.upenn.edu/~fdiebold/Textbooks.html

- Rob J Hyndman and George Athanasopoulos (2013), Forecasting: Principles and Practice-This text book is free and downloadable (see: https://www.otexts.org/fpp)

Other useful readings:

- Brockwell, P.J. and R.A. Davis (1996), Introduction to Time Series and Forecasting, Springer-Verlag
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A set of Notes and Tutorials Exercises will be uploaded onto the course website.

4 March 2015: Introduction, Uncertainty and Risks Associated with Business Forecasting, Industry Perspective and Best Practice Forecasting Principles. Chapter 1 (Hyndman)

11 March 2015: Statistical Concepts and Forecasting Tools (Quantitative and Qualitative). Chapter 2 (Diebold) Chapter 3 (Hyndman)

18 March 2015: Decomposition Techniques. Chapter 5&6 (Diebold)

25 March 2015: Regression (Bivariate) Techniques Applied in Demand Forecasting. Chapter 4 (Hyndman)

1 April 2015: Regression (Multivariate) Techniques–Applied in Demand Forecasting. Chapter 5 (Hyndman)

8 April 2015: Mid-semester break

15 April 2015: Autocorrelation Analysis. Chapter 7 (Diebold)

22 April 2015: Time series econometrics- stochastic processes, stationarity process, co-integration and unit root tests, (Chapter 21 Gujarati)

29 April 2015: Box-Jenkins Methodology. Chapter 8(Diebold), Chapter 8(Hyndman) and Chapter 22(Gujarati)

6 May 2104: Case Study- Energy Demand Modelling and Forecasting

13 May 2015: Forecasting Demand of a New Product without History, Scenario Analysis, Price and Income Elasticities and a Case Study- Forecasting Demand for a new Telecommunication Service in an Asian Country.

20 May 2015: Case Study- Peak Electricity Demand Modelling (Bottom-up and Top-Down Modelling) and Forecasting

27 May 2015: Post Modelling Adjustments and Construction of Forecasts

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

8 Tutorials Program

This will be provided in the Notes and Tutorials Exercises. Many tutorial exercises will require the use of an econometric software package. The first text book (Diebold) uses EViews and the second text book (Hyndman) uses R statistical package (downloadable free of cost). For this subject however EViews will be used extensively. EViews is available in all Business School computer labs.