EMET3007/4312/8012

Business and Economic Forecasting

Accurate forecasting of future events and their outcomes is a crucial input into a successful business or economic planning process. This course provides an introduction to various time series modeling and forecasting techniques. The course also looks at techniques for the evaluation of performance of forecasting methods and examines the role of forecasts in the decision making process. Students will learn how to use the various techniques in real world forecasting applications.

Mode of Delivery	On campus
Prerequisites	As listed in Programs and Courses
Incompatible Courses	As listed in Programs and Courses
Co-taught Courses	EMET3007, EMET4312, EMET8012 Graduate students attend joint classes with undergraduates but are assessed separately
Course Convener:	Qingyin Ma
Phone:	+61 2 612 57371
Email:	qingyin.ma@anu.edu.au
Office hours for student consultation:	Friday 5:00-6:00pm
Research Interests	Quantitative Economics, Macroeconomic Theory
Lecturer	Qingyin Ma
Phone:	Indicated above
Email:	Indicated above
Office hours for student consultation:	Indicated above
Tutor	To be announced on Wattle

SEMESTER 2

2018

COURSE OVERVIEW

Learning Outcomes

Upon successful completion of the requirements for this course, students will be able to:
- Understand and use various important techniques for time series modeling.
- Understand important concepts and acquire intermediate skills for economic forecasting.
- Understand stability properties of different kinds of dynamical systems.
- Complete basic programming tasks of time series analysis using Python (if programming skills are to be taught during the course).

Assessment Summary

Assessment Task	Value	Due Date	Date for Return of Assessment
1. Mid-term Exam	40%	Week 6 or Week 7	TBA
2. Final Exam	60% or 50%	Exam Weeks	TBA
3. Assignments	0% or 10%	TBA	TBA

Feedback

Staff Feedback

In this course, students will be given feedback in the form of verbal comments to the whole class in lecture, to tutorial groups in tutorial, and individually during consultation hours.

Student Feedback

ANU is committed to the demonstration of educational excellence and regularly seeks feedback from students. One of the key formal ways students have to provide feedback is through Student Experience of Learning Support (SELS) surveys. The feedback given in these surveys is anonymous and provides the Colleges, University Education Committee and Academic Board with opportunities to recognise excellent teaching, and opportunities for improvement.

For more information on student surveys at ANU and reports on the feedback provided on ANU courses, go to
http://unistats.anu.edu.au/surveys/selt/students/ and http://unistats.anu.edu.au/surveys/selt/results/learning/

Policies

ANU has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and implement them. You can find the University's education policies and an explanatory glossary at: http://policies.anu.edu.au/

Students are expected to have read the Academic Misconduct Rule before the commencement of their course.

Other key policies include:

- Student Assessment (Coursework)
- Student Surveys and Evaluations

Recommended Readings

The teaching materials aim to be self-contained, but the following are some good references:

- The main textbook for this course is *"Economic Forecasting"* by Graham Elliott and Allan Timmermann.
- If our week 10-12 topics include "structural dynamic macroeconomic models" (see the course schedule below), then the textbook *"Abstract Dynamic Programming"* by Dimitri P. Bertsekas will be used to introduce some elementary dynamic programming techniques.

Examination material or equipment

Details about the material or equipment that is permitted in an examination room will be announced on Wattle before exams.

COURSE SCHEDULE

Week/ Session	Summary of Activities	Assessment
1	Mathematical Techniques	
2	Mathematical Techniques	
3	Elementary Time Series Modelling and Forecasting	
4	Elementary Time Series Modelling and Forecasting	
5	Vector Autoregressions (VAR)	
6	Vector Autoregressions (VAR)	Possible mid-term exam
7	Vector Autoregressions (VAR)	Possible mid-term exam
8	Autoregressive Conditional Heteroskedasticity (ARCH)	
9	Generalized Autoregressive Conditional Heteroskedasticity (GARCH)	
10	TBA (see the note immediately below)	
11	TBA (see the note immediately below)	
12	TBA (see the note immediately below)	
	Examination period	Final exam

Note: Depending on students' feedback and teaching progress, **topics for week 10-12** will be one or two of the following:

- Nonparametric modelling and forecasting

- Structural dynamic macroeconomic models

- Binary forecasts

- Time series analysis in Python (if this topic is included, then elementary programming skills are to be taught during week 7-9 tutorials)

ASSESSMENT REQUIREMENTS

The ANU is using Turnitin to enhance student citation and referencing techniques, and to assess assignment submissions as a component of the University's approach to managing Academic Integrity. For additional information regarding Turnitin please visit the [ANU Online](#) website.

Students may choose not to submit assessment items through Turnitin. In this instance you will be required to submit, alongside the assessment item itself, copies of all references included in the assessment item.

As a further academic integrity control, students may be selected for a 15 minute individual oral examination of their written assessment submissions. Any student identified, either during the current semester or in retrospect, as having used ghost writing services will be investigated under the University's Academic Misconduct Rule.

Assessment Tasks

Assessment Task 1: Mid-term Exam (40%)

Assessment Task 2: Final exam (60% or 50%)

Assessment Task 3: Assignments (0% or 10%)

Note: If no assignments were asked to be submitted during the semester, then the final exam accounts for 60%. Otherwise, the final exam accounts for 50% and the assignments contribute to the rest 10%.

Assignment submission

Online Submission: Unless an exemption has been approved by the Associate Dean (Education) **a submission must be through Turnitin.** Assignments are submitted using Turnitin in the course Wattle site. You will be required to electronically sign a declaration as part of the submission of your assignment. Please keep a copy of the assignment for your records.

Extensions and penalties

Extensions and late submission of assessment pieces are covered by the Student Assessment (Coursework) Policy and Procedure. The Course Convener may grant extensions

for assessment pieces that are not examinations or take-home examinations. If you need an extension, you must request it in writing on or before the due date. If you have documented and appropriate medical evidence that demonstrates you were not able to request an extension on or before the due date, you may be able to request it after the due date. No submission of assessment tasks without an extension after the due date will be permitted. **If an assessment task is not submitted by the due date, a mark of 0 will be awarded.**

Returning assignments

Student work is to be returned through Turnitin.

Resubmission of assignments

No resubmission of assignments will be permitted.

Scaling

Your final mark for the course will be based on the raw marks allocated for each of your assessment items. However, your final mark may not be the same number as produced by that formula, as marks may be scaled. Any scaling applied will preserve the rank order of raw marks (i.e. if your raw mark exceeds that of another student, then your scaled mark will exceed the scaled mark of that student), and may be either up or down.

Privacy Notice

The ANU has made a number of third party, online, databases available for students to use. Use of each online database is conditional on student end users first agreeing to the database licensor's terms of service and/or privacy policy. Students should read these carefully.

In some cases student end users will be required to register an account with the database licensor and submit personal information, including their: first name; last name; ANU email address; and other information.

In cases where student end users are asked to submit 'content' to a database, such as an assignment or short answers, the database licensor may only use the student's 'content' in accordance with the terms of service – including any (copyright) licence the student grants to the database licensor.

Any personal information or content a student submits may be stored by the licensor, potentially offshore, and will be used to process the database service in accordance with the licensors terms of service and/or privacy policy.

If any student chooses not to agree to the database licensor's terms of service or privacy policy, the student will not be able to access and use the database. In these circumstances students should contact their lecturer to enquire about alternative arrangements that are available.

Tutorial Seminar Registration

Tutorial signup for this course will be done via the Wattle website. Detailed information about signup times will be provided on Wattle or during your first lecture. When tutorials are available for enrolment, follow these steps:

1. Log on to Wattle, and go to the course site
2. Click on the link "Tutorial enrolment"
3. On the right of the screen, click on the tab "Become Member of….." for the tutorial class you wish to enter
4. Confirm your choice

If you need to change your enrolment, you will be able to do so by clicking on the tab "Leave group…." and then re-enrol in another group. You will not be able to enrol in groups that have reached their maximum number. Please note that enrolment in ISIS must be finalised for you to have access to Wattle.

SUPPORT FOR STUDENTS

The University offers a number of support services for students. Information on these is available online from http://students.anu.edu.au/studentlife/