FINS4779/FINS5579
Research Methods in Finance 2

Course Outline
Semester 1, 2016
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PART A: COURSE-SPECIFIC INFORMATION

1 STAFF CONTACT DETAILS
Lecturer-in-charge: Robert Tumarkin
Office: Room 348, UNSW Business School Building
Phone No: (02) 9385 6730
Email: r.tumarkin@unsw.edu.au
Consultation Times: Tuesday 11:00-12:00, Wednesday 2:00-3:00 (or by appointment)

2 COURSE DETAILS

2.1 Teaching Times and Locations
Lectures begin in Week 1 and continue through Week 12.
Class meetings are scheduled for:

Day: Friday
Time: 10:00 – 13:00
Location: LAW 276

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
Research Methods in Finance 2 is an advanced course on empirical research in finance covering econometric methods, data management, data collection, and programming. It is intended to provide students with theoretical knowledge to help them stay current in the field and practical knowledge to help them plan, analyse, and implement research projects.

2.4 Course Aims and Relationship to Other Courses
The course has two principal objectives to help students succeed as researchers: (i) provide a strong foundation in econometric techniques and (ii) develop skills to effectively implement research. Each is discussed below:

(i) Econometric techniques:

The first part of the course discusses a unified framework for analysing three econometric methods commonly used in finance. Students will learn how to recognise similarities among least squares regression, maximum likelihood, and generalised method of moments. Students will learn not to view econometrics as a black-box tool to be applied indiscriminately, but instead understand the strengths and weaknesses of different techniques. They will develop skills that enable them to remain up-to-date with constantly evolving econometric methodologies.
(ii) **Research skills:**

The second part of the course discusses skills required to complete a research project. Students often acquire practical knowledge outside the classroom, leading to a fragmented and incomplete view of ways to accomplish research tasks. In class, students will instead develop a command of a variety of tools so that they may work efficiently and have a high degree of confidence in their results.

This section of the class will provide an introduction to data management and programming techniques. Principals of data management will cover appropriate use of database management systems, including SAS and SQL. The programming methods will emphasise structured, modular program design with applications to topics such as collecting data from the internet sources, natural language processing, Monte Carlo simulation, and numerical solution of partial differential equations. Specific topics will be selected to reflect student's interests.

A prerequisite for this course is Research Methods in Finance 1 (FINS3775/FINS4775).

**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 (e.g. ‘be an effective team player’). You demonstrate this by achieving specific Program Learning Outcomes - what you are able to DO by the end of your degree (e.g. ‘participate collaboratively and responsibly in teams’).

For more information on the Postgraduate Coursework Program Learning Goals and Outcomes, see Part B of the course outline.

<table>
<thead>
<tr>
<th>Business Postgraduate Coursework Program Learning Goals and Outcomes</th>
</tr>
</thead>
</table>
| **1. Knowledge:** Our graduates will have current disciplinary or interdisciplinary knowledge applicable in local and global contexts.  
You should be able to identify and apply current knowledge of disciplinary or interdisciplinary theory and professional practice to business in local and global environments.  |

**2. Critical thinking and problem solving:** Our graduates will have critical thinking and problem solving skills applicable to business and management practice or issues.  
You should be able to identify, research and analyse complex issues and problems in business and/or management, and propose appropriate and well-justified solutions.

**3. Communication:** Our graduates will be effective communicators in professional contexts.  
You should be able to:  
   a. Produce written documents that communicate complex disciplinary ideas and information effectively for the intended audience and purpose; and  
   b. Produce oral presentations that communicate complex disciplinary ideas and information effectively for the intended audience and purpose. |
4. Teamwork: Our graduates will be effective team participants. You should be able to participate collaboratively and responsibly in teams, and reflect on your own teamwork, and on the team’s processes and ability to achieve outcomes.

5. Ethical, social and environmental responsibility: Our graduates will have a sound awareness of ethical, social, cultural and environmental implications of business issues and practice. You should be able to:
   a. Identify and assess ethical, environmental and/or sustainability considerations in business decision-making and practice, and
   b. Consider social and cultural implications of business and/or management practice.

The following table shows how your Course Learning Outcomes relate to the overall Program Learning Goals and Outcomes, and indicates where these are assessed (they may also be developed in tutorials and other activities):

<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 for all Business postgraduate coursework students:</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>
<tr>
<td>1 Knowledge</td>
<td>Analyze empirical questions to highlight key characteristics of the problem that make econometric identification challenging.</td>
<td>• Assignment/Projects</td>
</tr>
<tr>
<td></td>
<td>Understand the three types of estimators most commonly used in Finance research: OLS, GMM, and MLE.</td>
<td>• Final exam</td>
</tr>
<tr>
<td></td>
<td>Evaluate common features of and key differences between econometric estimators.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Describe the structure and content of important datasets used in Finance research.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Achieve basic fluency in a general-purpose programming language.</td>
<td></td>
</tr>
<tr>
<td>2 Critical thinking and problem solving</td>
<td>Develop empirical models that address econometric issues and achieve robust identification.</td>
<td>• Assignments/Projects</td>
</tr>
<tr>
<td></td>
<td>Execute empirical techniques used in corporate finance. That is, practice applying specialized forms of OLS, GMM, and MLE to panel data regressions, limited dependent variables analysis, volatility models, etc.</td>
<td>• Final exam</td>
</tr>
<tr>
<td></td>
<td>Combine Finance datasets and solve data-</td>
<td></td>
</tr>
</tbody>
</table>
related issues commonly encountered by researchers.

Write programs using a general-purpose programming language to solve basic problems encountered in research.

3a. Written communication

- Construct written work that is logically and professionally presented.
- Assignments/Projects
- Final exam

3b. Oral communication

- Critique research papers in the field, noting key assumptions in the work and any potential violations therein.
- Class participation

4. Teamwork

- Not specifically addressed in this course.

5a. Ethical, social and environmental responsibility

- Not specifically addressed in this course.

5b. Social and cultural awareness

- Not specifically addressed in this course.

## 3 ASSESSMENT

### 3.1 Formal Requirements

In order to pass this course, you must:

- achieve a composite mark of at least 50; and
- make a satisfactory attempt at all assessment tasks (see below).

### 3.2 Assessment Details

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Weighting</th>
<th>Length</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Assignments / projects</td>
<td>70%</td>
<td>See below</td>
<td>As assigned</td>
</tr>
<tr>
<td>2. Final exam</td>
<td>20%</td>
<td>3 hours</td>
<td>TBD</td>
</tr>
<tr>
<td>3. Class participation</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Learning outcomes and graduate attributes are developed and assessed in these tasks as follows:

1. Assignment/projects

   *Econometric assignments (20% of course mark):* Students will receive short, weekly assignments during the econometric component of the course. The assignments are included to ensure that students stay current on the lecture topics and learn the fundamental aspects of important empirical methods. Students should turn in short answers to all problems.

   *Research Project (35% of course mark):* Students will have to prepare a preliminary draft of an original research project. The draft should focus on hypothesis development (covered during the introduction to the course), specification design
(covered during the empirical discussion), and database construction (covered during the data section). Preliminary results should be presented, benchmarking these results against existing findings in the finance literature.

Students should discuss the project with the lecturer early in the class to ensure it is sufficiently rich. For example, the dataset should require merging together several commonly used financial databases and generating control variables frequently encountered in research.

The project report should provide an overview of the work, the results of the replication, and the full source code. Grading will be based on accuracy of the work, documentation of steps used, and implementation of good research and database management practices.

*Programming Project (15% of course mark)*: Students will need to write a program to solve a research problem. Students will need to provide source code of the program. Grading will be based on accuracy of the work, documentation of the program design, in-code comments, and use of good programming practices.

2. **Final exam**

A 3 hour written final exam will review all topics covered in the course.

3. **Class participation**

Regular attendance and participation is expected of all students. This helps ensure that the classes are structured to meet student needs.

### 3.3 Assignment Submission Procedure

Assignments should be handed or emailed to the lecturer when due. Students are reminded to keep a copy of all work submitted for assessment and to retain returned marked assignments.

### 3.4 Late Submission

Students should make every effort to turn in assignments and projects in time. Late assignments may be accepted under special circumstances. Students are encouraged to talk with the professor early if they expect they will be unable to complete an assignment on time. Assignments that are late without explanation will be penalized the equivalent of a letter grade for each day they are late.

**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.
4 COURSE RESOURCES

Readings:

Course notes will be provided to students. There is no required text for the course. There are many good Econometric texts. The following books (available in the bookstore) are a small sample than can serve as useful references in this and in future classes:


Software:

The class will primarily use STATA and SAS for the econometric analysis. SAS will also be used to discuss database construction. The university has a site license for both STATA and SAS, and these programs are pre-installed on computers in the School of Banking and Finance.

Programming language discussion will focus on open-source languages, such as Python or Ruby. Instructions for installation of these languages and related development environments will be provided during class.

Website:

Announcements, course handouts, and other material will be made available on Moodle at [http://moodle.telt.unsw.edu.au](http://moodle.telt.unsw.edu.au).

5 COURSE EVALUATION AND DEVELOPMENT

In this course, I will seek your feedback through class participation, informal discussions, and the Course and Teaching Evaluation and Improvement (CATEI) process. We will discuss problems in class that will provide a forum to ascertain whether students had adequate preparation from the lectures, whether the assignment was useful, and difficulty level. Continual improvements will be made as a result of this feedback as the semester progresses, informing the content of class lectures, the selection of literature for review, and the design of upcoming assignments. Any changes will be communicated to students.

For more information on CATEI, please see [http://www.learningandteaching.unsw.edu.au](http://www.learningandteaching.unsw.edu.au)
## 6 COURSE SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>29 February, 7 March</td>
<td>Introduction/Ordinary Least Squares</td>
</tr>
<tr>
<td></td>
<td>14 March, 21 March,</td>
<td>Instrumental Variables, Panel Data, and other Econometric Techniques</td>
</tr>
<tr>
<td></td>
<td>4 April, 11 April,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>18 April</td>
<td></td>
</tr>
<tr>
<td>3-7</td>
<td>16 May, 23 May</td>
<td>Programming: Application to a problem determined by the class</td>
</tr>
<tr>
<td>8-10</td>
<td>25 April, 2 May, 9 May</td>
<td>Database Management</td>
</tr>
</tbody>
</table>

business.unsw.edu.au

CRICOS Code 00098G
PART B: KEY POLICIES, STUDENT RESPONSIBILITIES AND SUPPORT

7 PROGRAM LEARNING GOALS AND OUTCOMES

The Business School Program Learning Goals reflect what we want all students to BE or HAVE by the time they successfully complete their degree, regardless of their individual majors or specialisations. For example, we want all our graduates to HAVE a high level of business knowledge, and a sound awareness of ethical, social, cultural and environmental implications of business. As well, we want all our graduates to BE effective problem-solvers, communicators and team participants. These are our overall learning goals for you and are sought after by employers.

You can demonstrate your achievement of these goals by the specific outcomes you achieve by the end of your degree (e.g. be able to analyse and research business problems and propose well-justified solutions). Each course contributes to your development of two or more program learning goals/outcomes by providing opportunities for you to practise these skills and to be assessed and receive feedback.

Program Learning Goals for undergraduate and postgraduate students cover the same key areas (application of business knowledge, critical thinking, communication and teamwork, ethical, social and environmental responsibility), which are key goals for all Business students and essential for success in a globalised world. However, the specific outcomes reflect different expectations for these levels of study.

We strongly advise you to choose a range of courses which assist your development of these skills, e.g., courses assessing written and oral communication skills, and to keep a record of your achievements against the Program Learning Goals as part of your portfolio.

<table>
<thead>
<tr>
<th>Business Undergraduate Program Learning Goals and Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Knowledge: Our graduates will have in-depth disciplinary knowledge applicable in local and global contexts.</td>
</tr>
<tr>
<td>You should be able to select and apply disciplinary knowledge to business situations in a local and global environment.</td>
</tr>
<tr>
<td>2. Critical thinking and problem solving: Our graduates will be critical thinkers and effective problem solvers.</td>
</tr>
<tr>
<td>You should be able to identify and research issues in business situations, analyse the issues, and propose appropriate and well-justified solutions.</td>
</tr>
<tr>
<td>3. Communication: Our graduates will be effective professional communicators.</td>
</tr>
<tr>
<td>You should be able to:</td>
</tr>
<tr>
<td>a. Prepare written documents that are clear and concise, using appropriate style and presentation for the intended audience, purpose and context, and</td>
</tr>
<tr>
<td>b. Prepare and deliver oral presentations that are clear, focused, well-structured, and delivered in a professional manner.</td>
</tr>
<tr>
<td>4. Teamwork: Our graduates will be effective team participants.</td>
</tr>
<tr>
<td>You should be able to participate collaboratively and responsibly in teams, and reflect on your own teamwork, and on the team’s processes and ability to achieve outcomes.</td>
</tr>
<tr>
<td>5. Ethical, social and environmental responsibility: Our graduates will have a sound awareness of the ethical, social, cultural and environmental implications of business practice.</td>
</tr>
</tbody>
</table>
You will be able to:

a. Identify and assess ethical, environmental and/or sustainability considerations in business decision-making and practice, and
b. Identify social and cultural implications of business situations.

Business Postgraduate Coursework Program Learning Goals and Outcomes

1. Knowledge: Our graduates will have current disciplinary or interdisciplinary knowledge applicable in local and global contexts.
   You should be able to identify and apply current knowledge of disciplinary or interdisciplinary theory and professional practice to business in local and global environments.

2. Critical thinking and problem solving: Our graduates will have critical thinking and problem solving skills applicable to business and management practice or issues.
   You should be able to identify, research and analyse complex issues and problems in business and/or management, and propose appropriate and well-justified solutions.

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   You should be able to:
   a. Identify and assess ethical, environmental and/or sustainability considerations in business decision-making and practice, and
   b. Consider social and cultural implications of business and/or management practice.

8 ACADEMIC HONESTY AND PLAGIARISM

The University regards plagiarism as a form of academic misconduct, and has very strict rules regarding plagiarism. For UNSW policies, penalties, and information to help you avoid plagiarism see: https://student.unsw.edu.au/plagiarism as well as the guidelines in the online ELISE tutorials for all new UNSW students: http://subjectguides.library.unsw.edu.au/elise

To see if you understand plagiarism, do this short quiz: https://student.unsw.edu.au/plagiarism-quiz

For information on how to acknowledge your sources and reference correctly, see: https://student.unsw.edu.au/harvard-referencing

For the Business School Harvard Referencing Guide, see the Business Referencing and Plagiarism webpage (Business >Students>Learning support> Resources>Referencing and plagiarism).

For information for staff on how UNSW defines plagiarism, the types of penalties that apply and the protocol around handling plagiarism cases, see:
9 STUDENT RESPONSIBILITIES AND CONDUCT

Students are expected to be familiar with and adhere to university policies in relation to class attendance and general conduct and behaviour, including maintaining a safe, respectful environment; and to understand their obligations in relation to workload, assessment and keeping informed.

Information and policies on these topics can be found in UNSW Current Students ‘Managing your Program’ webpages: https://student.unsw.edu.au/program.

9.1 Workload

It is expected that you will spend at least nine to ten hours per week studying this course. This time should be made up of reading, research, working on exercises and problems, online activities and attending classes. In periods where you need to complete assignments or prepare for examinations, the workload may be greater. Over-commitment has been a cause of failure for many students. You should take the required workload into account when planning how to balance study with employment and other activities.

We strongly encourage you to connect with your Moodle course websites in the first week of semester. Local and international research indicates that students who engage early and often with their course website are more likely to pass their course.

Information on expected workload: https://student.unsw.edu.au/uoc

9.2 Attendance

Your regular and punctual attendance at lectures and seminars, as well as in online activities, is expected in this course. University regulations indicate that if students attend less than 80% of scheduled classes they may be refused final assessment. For more information, see: https://student.unsw.edu.au/attendance

9.3 General Conduct and Behaviour

You are expected to conduct yourself with consideration and respect for the needs of your fellow students and teaching staff. Conduct which unduly disrupts or interferes with a class, such as ringing or talking on mobile phones, is not acceptable and students may be asked to leave the class. More information on student conduct is available at: https://student.unsw.edu.au/conduct

9.4 Health and Safety

UNSW Policy requires each person to work safely and responsibly, in order to avoid personal injury and to protect the safety of others. For more information, see http://safety.unsw.edu.au/.

9.5 Keeping Informed

You should take note of all announcements made in lectures, tutorials or on the course web site. From time to time, the University will send important announcements to your university e-mail address without providing you with a paper copy. You will be deemed to have received this information. It is also your responsibility to keep the University informed of all changes to your contact details.
10 SPECIAL CONSIDERATION
You must submit all assignments and attend all examinations scheduled for your course. You should seek assistance early if you suffer illness or misadventure which affects your course progress.

General information on special consideration for undergraduate and postgraduate courses:
1. All 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 > Online Services > Special Consideration). You will then need to submit the originals or certified copies of your completed Professional Authority form (pdf - download here) and other supporting documentation to Student Central. For more information, please study carefully in advance the instructions and conditions at: [https://student.unsw.edu.au/special-consideration](https://student.unsw.edu.au/special-consideration)
2. Please note that documentation may be checked for authenticity and the submission of false documentation will be treated as academic misconduct. The School may ask to see the original or certified copy.
3. Applications will **not** be accepted by teaching staff. The lecturer-in-charge will be automatically notified when you lodge an online application for special consideration.
4. Decisions and recommendations are only made by lecturers-in-charge (or by the Faculty Panel in the case of UG final exam special considerations), **not** by tutors.
5. Applying for special consideration **does not** automatically mean that you will be granted a supplementary exam or other concession.
6. Special consideration requests **do not allow** lecturers-in-charge to award students additional marks.

11 STUDENT RESOURCES AND SUPPORT
The University and the Business School provide a wide range of support services for students, including:

- **Business School Education Development Unit (EDU)**
  [https://www.business.unsw.edu.au/students/resources/learning-support](https://www.business.unsw.edu.au/students/resources/learning-support)
  The EDU provides academic writing, study skills and maths support specifically for Business students. Services include workshops, online resources, and individual consultations. EDU Office: Level 1, Room 1033, Quadrangle Building. Phone: 9385 5584; Email: edu@unsw.edu.au.

- **Business Student Centre**
  [https://www.business.unsw.edu.au/students/resources/student-centre](https://www.business.unsw.edu.au/students/resources/student-centre)
  Provides advice and direction on all aspects of admission, enrolment and graduation. Office: Level 1, Room 1028 in the Quadrangle Building; Phone: 9385 3189.

- **Moodle eLearning Support**
  For online help using Moodle, go to: [https://student.unsw.edu.au/moodle-support](https://student.unsw.edu.au/moodle-support). For technical support, email: itservicecentre@unsw.edu.au; Phone: 9385 1333.

- **UNSW Learning Centre**
  [www.lc.unsw.edu.au](http://www.lc.unsw.edu.au) Provides academic skills support services, including workshops and resources, for all UNSW students. See website for details.

- **Library training and search support services**
IT Service Centre

UNSW Counselling and Psychological Services
https://student.unsw.edu.au/wellbeing Provides support and services if you need help with your personal life, getting your academic life back on track or just want to know how to stay safe, including free, confidential counselling. Office: Level 2, East Wing, Quadrangle Building; Phone: 9385 5418; Email: counselling@unsw.edu.au

Student Equity & Disabilities Unit
http://www.studentequity.unsw.edu.au Provides advice regarding equity and diversity issues, and support for students who have a disability or disadvantage that interferes with their learning. Office: Ground Floor, John Goodsell Building; Phone: 9385 4734; Email: seadu@unsw.edu.au