



## Institute of Transport and Logistics Studies

144 Burren Street, Newtown, Sydney

Directions and map: <http://sydney.edu.au/business/itls/about/directions>

**Note:** ITLS is not on the main campus

**Please see the ITLS website for other important details about units at ITLS:**

[http://sydney.edu.au/business/itls/courses/transport\\_and\\_logistics](http://sydney.edu.au/business/itls/courses/transport_and_logistics)

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### **ITLS student enquiries office:**

Email: [business.itlsinfo@sydney.edu.au](mailto:business.itlsinfo@sydney.edu.au)

Office: Room 312B, Level 3, ITLS, 144 Burren Street, Newtown

**Assessment collection / viewing:** Monday to Friday 12pm to 1.30pm ONLY

### **Timetable:**

Please note that the timetable provided in this outline is subject to change. You should check your timetable on MyUni for final dates and to see which group you have been assigned to, see: <http://myuni.usyd.edu.au/>

## TPTM6495

### Analysis Tools for Transport and Logistics Semester One, 2011

#### Unit of Study Outline

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**Consultation:** By appointment.

Please use email as your first method of communication. Additionally, should you have questions pertaining to course content you will be directed to ask these questions via the discussion board on the course Blackboard site.

**Staff: Dr Geoffrey Clifton**

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**Office:** ITLS Building, Level 2, Room: 212

**Consultation:** 13:00 to 13:45 Monday, Wednesday and Thursday or otherwise by appointment.

Please use email as your first method of communication. Additionally, should you have questions pertaining to course content you will be directed to ask these questions via the discussion board on the course Blackboard site.

## 1. Unit of study information

### 1.1. School handbook description

Quantitative analysis is a key activity in developing successful business strategies in the areas of transportation and logistics management. Successful business strategies are generally based on diverse forms of analysis on information collected from a wide range of sources. This unit of study provides an introduction to the theory and principles of quantitative analysis of transport and logistics markets through lectures, computer workshops, and practical assessments requiring the analysis of various types of data. Through classes and assessments designed to specifically teach students how to undertake quantitative research in a practical manner, students will be able to conduct their own quantitative analysis of transport and logistic market places.

### 1.2. Pre-requisite units

There are no pre-requisite units for TPTM6495.

### 1.3. Assumed knowledge and/or skills

It is assumed that you will have a basic knowledge of operating MS Word and MS Excel. It is also assumed that you have a basic level of mathematical knowledge commensurate with a student enrolled in a Master's degree.

### 1.4. Workload requirement

It is expected that you will spend approximately 150 hours on this unit (including lectures, preparing assessment) and produce approximately 9,000 words or equivalent of work. This time should be made up of reading research, working on exercises and problems and participating in classes. In periods where you need to complete assignments or prepare for examinations, the required workload may be greater.

## 2. Learning aims and outcomes

### 2.1. Aims of the unit

This course is an applied introduction to statistical analysis and management science as applied to transport and logistics. Students will be introduced to basic techniques through the use of varied examples and case studies where appropriate. Specific topics covered are: understanding basic data; probability distributions; regression analysis; linear programming; and simulation modelling. By design, we have been selective in the topics and methods covered, preferring to equip participants with insights into some key methods rather than a superficial overview of a wider range of theories and methods. The specialised rigour will provide a better training for tackling topics beyond those covered within the course, and will provide you with skills crucial to subsequent courses in transport and logistics.

## 2.2. Learning outcomes

There are eight learning outcomes (LO's) for this unit of study. They are as follows:

- LO1:** Demonstrate a commitment to lifelong learning through continuous reflection on personal and professional experiences, self-evaluation and self-improvement.
- LO2:** Manage, analyse, evaluate and use information efficiently and effectively.
- LO3:** Demonstrate rigorous analytic methods for solving complex problems.
- LO4:** Create coherent arguments when recommending solutions and critically evaluating quantitative analysis.
- LO5:** Recognise when quantitative analysis can be used in order to identify, define and analyse problems and recommend creative solutions within real-world constraints.
- LO6:** Integrate quantitative analysis theory with real-world scenarios to make informed managerial decisions.
- LO7:** Communicate quantitative information intuitively and sensibly.
- LO8:** Employ technologies (specifically Word, SPSS and Excel) to effectively communicate information.

## 2.3. Links between learning outcomes and learning and teaching methods

This course is delivered primarily through a lecture and computer lab format, and is supplemented by online resources made available to students.

### Lectures:

Lectures are used to provide a framework which forms a basis for you to explore the topic further. The key concepts are initially provided to you in an academic approach to study. You are not expected to fully grasp the content of each lecture immediately but among your peers you should be able to identify key themes and important concepts. At the beginning of each lecture any administrative announcements are made (and these are duplicated online as well). There will also be a short summary made of the previous lecture and an overview of what is being taught in the current lecture and the relevance of the technique. Up to 5 minutes will be allocated for Q&A on any aspect of the unit at the beginning/end of the lecture and there will be the opportunity to actively learn with peers via small in class exercises. You are strongly advised to actively participate.

### Computer Workshops:

Computer workshops supplement the lectures. At this point many of the topics discussed in lectures should become much clearer in the students' mind. In these classes students will also gain familiarity with the software used to complete the analytic methods taught in this class. The focus of each workshop is to examine how the analytic technique taught in the previous lecture can be applied and how these methods can be used to examine "real-world" situations. They are intended as active collaborative learning experiences where your informed input will be both expected and supported. It will be an opportunity for you to develop skills and understand the relevance to these outcomes to the topic of the lesson.

**Print:**

Introductory Statistics: This is an introductory text written for the course by the lecturer and made freely available via Blackboard. It is advised that students who have no familiarity with statistics read this document **prior** to the course beginning.

Textbook: The textbook is divided into five chapters, with each chapter corresponding with each of the five lectures. Relevant chapters of the textbook should be read **prior** to each lecture.

SPSS Guide: This is a guide to SPSS written for the course by the lecturer and made freely available via Blackboard. Relevant sections of the guide book should be read **prior** to each workshop.

Excel Guide: This is a guide to MS Excel written for the course by the lecturer and made freely available via Blackboard. Relevant sections of the guide book should be read **prior** to each workshop.

**Online:**

Blackboard (<http://blackboard.econ.usyd.edu.au>): This is the main online learning support. It is essential that you log in at least twice per week to keep abreast of unit-wide announcements and use the resources to supplement your learning.

Lecture Notes: Slides for each lecture are made available seven days before each lecture for you to download and revise on the blackboard site.

Podcasts: Several podcasts summarising key themes and important concepts will be made available for you to download through out the semester,

Online Discussion Forums: These can be used to clarify questions relating to the case study and essay assessments and another will be used for other queries. Please check the FAQ list prior to posting a new question as duplicate questions will simply be ignored or removed. Appropriate online behaviour in such discussions is expected at all times.

## 2.4. Links between learning outcomes and assessment

**Multiple Choice Quiz**

This is a single ongoing piece of assessment designed to encourage students to come to class prepared, having revised lecture materials and synthesizing the concepts taught, as well as provide students immediate feedback on their strengths and weaknesses with respect to the course content. Specifically, these quizzes will allow students to:

- Show self-discipline to revise lecture content and prepare for quiz (LO1).
- Use limited time to effectively answer all questions (LO3).
- Understand how lecture content can be applied (LO5, LO6).
- Complete appropriate readings to enhance understanding of lecture content (LO1).

**Computer Exam**

This assessment is designed to test your understanding of the technical component of the course. You will be required to answer a series of questions where the use of the computer will aid you in your analysis. This assessment item will allow students to demonstrate ability to:

- Use time allocated to complete the assignment appropriately (LO1, LO2).
- Identify and solve a real world problem (LO3).
- Select the appropriate analytic method given the problem being investigated (LO5).
- Provide appropriate conclusions and recommendations as a result of analysis (LO4,LO6).
- Use software correctly and efficiency to ensure research objectives are achieved (LO8).

### Group Assignment:

This assessment is designed to test your ability to operate in a pseudo work environment. You will be required to work within a group and solve a series of complex problems. You will need to present the analysis that you conduct clearly and coherently, as well as explain the logic and reasoning behind your actions. This assessment will allow students to demonstrate the following skills:

- Display effective time management allowing for appropriate completion of set task (LO1,LO2).
- Demonstrate an ability to share ideas for the benefit of the group (LO6,LO7).
- Identify the underlying problem that needs to be solved (LO3,LO4).
- Recognise the appropriate technique to use in order to solve the defined problem (LO5,LO8).
- Synthesise research materials from varied sources into a cogent argument (LO6,LO7).
- Present work in a professional manner using an acceptable written structure (LO7).
- Write a concise and articulate report under a restrictive constraint (LO7).

### Final Exam:

The final exam is the capstone assessment for this course. It is designed to test the overall mastery of the concepts taught this semester. In line with this objective, it will also test all the learning outcomes prescribed for this course. It will also require students to:

- Show self-discipline to revise course content and prepare for exam.
- Use limited time to effectively answer all questions.
- Be able to quickly identify the right techniques to use in various situations.
- Understand how course content can be applied.
- Be able to conceptualise the course as a whole.
- Be able to identify key course content.

## 3. Assessment

Assessment items	Relevant unit learning outcome/s	Word length	Weight	Due Date*
Multiple Choice Quiz	LO1,3,5,6	500	15%	Every Workshop
Computer Exam	LO1,2,3,4,5,6	1500	30%	12 April 2011
Group Report	LO1,2,3,4,5,6,7,8	3000	25%	3 June 2011
Final Exam	LO1,2,3,4,5,6	2000	30%	TBA
Academic honesty module **		N/A	0%	18 March 2011

\* The due date is also the closing date. This means that assessment items will not be accepted after the due date except by prior agreement.

\*\* Students must complete the academic honesty module in Blackboard with a mark above 80%, or an Absent Fail (AF) grade will be given for the entire unit. Students can complete the module multiple times until this grade is achieved. Students who completed the module with a score of 80% or above last semester do not need to do it again.

All assignments must be submitted electronically via Blackboard. Assignments submitted electronically do not require cover sheets. Ensure that your student ID number (SID) is in the top right hand corner of each page for individual assignments and the Group name or number plus SID of all members is in the top right hand corner for group assignments. Full information about how to prepare assignments for electronic submission can be found at

[http://blackboard.econ.usyd.edu.au/modules/1454\\_1/Turnitin%20Student%20Guide%20%285.2%29%20280610.pdf](http://blackboard.econ.usyd.edu.au/modules/1454_1/Turnitin%20Student%20Guide%20%285.2%29%20280610.pdf)).

Should submission problems occur, students should contact Faculty eLearning Support first on 9036 6433 or [business.elearning@sydney.edu.au](mailto:business.elearning@sydney.edu.au) or the Unit Coordinator as soon as possible.

### 3.1. Detailed assessment information

**MC Quiz:** The multiple choice quizzes are closed book. At the beginning of each workshop you will be given 10 minutes to complete the quiz using Respondus software. Upon completion of the quiz you will be able to view the score that you obtained. Answers to the quiz questions will not be provided as this only encourages rote learning which is useless in this course. After all streams have completed the quiz, the questions will be made available on Blackboard for you to attempt as many times as you wish. If you cannot understand what is the correct answer or why it is the correct answer you are encouraged to start a thread on the discussion board.

**Exams:** You will be allowed to take a single a4 sheet of paper with notes written on it. It must have your name and SID in the top right corner. You must hand in this sheet along with your exam. The feedback for the computer exam will show you what the potentially correct answers might be, there will be a video showing you how to use the software to get those answers. Should you require further feedback you will be able to discuss issues with the teaching staff.

**Group Assignment:** A specific marking criteria will be uploaded to Blackboard that shows exactly what is being sought in the completion of the assignment. The word limit will be approximately 3000 words. You are being assessed on your ability to work in a team, such that individual members can pull together disparate tasks to complete a well written assignment that cogently answers the research question. There will be peer evaluation where you are required to assess the performance of your group members. You are expected to keep all emails relevant to the assignment as well as a record of the minutes of any group meeting so that the teaching staff can use them in the event of group conflicts. Feedback specific to the marking criteria will be emailed to you, more general comments and suggestions about the assignment may be written on the assignment itself.

### 3.2. Referencing style and style guide

For this unit the referencing style is the Harvard Referencing Style. Students should download and adhere to the 'How to write a paper at the Institute of Transport and Logistics Studies' report available at [http://sydney.edu.au/business/itls/courses/transport\\_and\\_logistics/student\\_resources](http://sydney.edu.au/business/itls/courses/transport_and_logistics/student_resources).

### 3.3 Feedback on assessment

Students will be able to immediately assess their ongoing learning via the results from the multiple choice quizzes. If students are encountering difficulties or achieving marks they would like to improve upon they should utilise the discussion boards or speak to the teaching staff for further feedback,

Grades for the computer exam and group assignment will be posted on blackboard within three weeks of submission. Marks will not be given over the phone or via email. Errors made in your assignments are typically identified on the paper. A marking sheet will be the main way to communicate feedback on the assignment. For each assessment task you will get an overall comment as well as an indicator against the level of achievement against each of the assessment criteria. A summary of class-wide errors and appropriate improvement action for each criterion is provided on Blackboard wherever possible. If you would like further feedback on the assessment task, you are encouraged to ask during tutorials or consultation hours. This can be done in pairs or groups if you have similar issues to discuss.

### 3.4. Academic honesty, plagiarism, legitimate cooperation and groupwork

Commencing students should complete the academic honesty module available via Blackboard before their first assessment submission. Students should refer to Faculty and University policies on academic dishonesty and plagiarism

([sydney.edu.au/business/currentstudents/student\\_information/student\\_administration\\_manual](http://sydney.edu.au/business/currentstudents/student_information/student_administration_manual)), copyright ([sydney.edu.au/senate/policies/Intellectual\\_Property\\_Rule.pdf](http://sydney.edu.au/senate/policies/Intellectual_Property_Rule.pdf)) and the 'All your own work website' ([sydney.edu.au/student\\_affairs/plagiarism\\_index.shtml](http://sydney.edu.au/student_affairs/plagiarism_index.shtml)) for information about legitimate cooperation, group work, how to reference correctly and how to avoid plagiarism.

Academic honesty is important to protect students' right to receive due credit for work submitted for assessment. It is clearly unfair for students to submit work for assessment that dishonestly represents the work of others as their own and gain marks and degrees, which are not based on their own efforts and abilities. Deliberate breaches of academic honesty constitute academic misconduct.

These breaches include: plagiarism, fabrication of data, recycling previously submitted material, engaging someone else to complete an assessment on one's behalf and misconduct during supervised assessments.

The penalties for academic misconduct may include: a mark of zero on the assessment; a fail grade in the unit of study, additional assessment (including an unseen exam), and reference of the matter to the University Registrar.

All assessments will be checked for plagiarism. Where plagiarism is suspected, the assessment will be fully checked and monitored using manual process, Google checks and also electronic plagiarism detectors. In order to do this, the Faculty may reproduce the assessment, provide a copy to another member of faculty, and/or communicate a copy of this assignment to a plagiarism checking service (which may then retain a copy of the assignment on its database for the purpose of future plagiarism checking).

Academic dishonesty involves more than just copying material. Cooperation and helping other students may at times trigger academic dishonesty proceedings if it appears you have worked too closely with another student. In this course:

- Multiple Choice Quiz (this is an individual assignment).
- Computer Exam (this is an individual assignment).
- Group Report (this is a group assignment).
- Final Exam (this is an individual assignment).

Individual assignments must be written and prepared alone. You may consult with other students about ideas and possible research sources but the analysis and writing of the assignment must be done alone. Group assignments should be prepared within the group. Students should contribute fully to the group and take part in all group activities, contributing ideas, analysis and writing to the final product. While students within the group should assist each other freely, students should not carry this level of cooperation outside the group. One group may cooperate and help another group about ideas and possible research sources but the analysis and writing of the assignment must be done by the group alone.

## 4. Texts and other resources

Recommended Text:

This book has been tailored specifically for this course, and each chapter correlates to a particular analysis method/tool.

Rose, J. and M. Beck (Compilers), 2007, *Basic quantitative analysis for management*, Pearson Education Australia.

This book was compiled from Basic Business Statistics and Quantitative Analysis for Management.

Useful Texts:

Should students require additional material to assist with learning, the following books are useful resources:

Anderson, D., Sweeney, D. and T. Williams, 2004, *Contemporary management science with spreadsheets*, Thompson Learning.

Levin, D.M., Stephan, D., Krehbeil, T.C. and M.L.: Berenson, 2005, *Statistics for managers using Microsoft Excel*, 4th edn, Pearson Prentice Hall.

## 5. University and Faculty policies and support

### 5.1. Faculty policies

Faculty policies are contained in the Administration Manual for Students:

[sydney.edu.au/business/currentstudents/student\\_information/student\\_administration\\_manual](http://sydney.edu.au/business/currentstudents/student_information/student_administration_manual).

It is crucial that you take the time to consult this manual early in your studies in order to familiarise yourself with policies and procedures relating to critical issues such as the Faculty's policy on special consideration (including requirements and timelines. e.g. lodging applications five working days after a missed assessment), appeals (lodge within 15 working days of the decision) and other policies such as enrolment, credit etc. Assistance is available from the Faculty's Student Information Office ([sydney.edu.au/business/student\\_information\\_office](http://sydney.edu.au/business/student_information_office)).

### 5.2. University policies

- **University policies:** [sydney.edu.au/policy](http://sydney.edu.au/policy)
- **Assistance** is available from the University's Student Centre: [sydney.edu.au/current\\_students/student\\_administration](http://sydney.edu.au/current_students/student_administration)
- **The code of conduct** is an important policy which outlines the University's expectations about treating all staff employees and students with respect, dignity, impartiality, courtesy and sensitivity and refrain from acts of discrimination, harassment or bullying: [sydney.edu.au/ab/policies/Student\\_code\\_conduct.pdf](http://sydney.edu.au/ab/policies/Student_code_conduct.pdf)

### 5.3. Student resources and services

Links to other student services and resources are included on Blackboard and on the learning and teaching section of the Faculty website: [sydney.edu.au/business/learning](http://sydney.edu.au/business/learning)

## 6. Continual improvement of the Unit

### 6.1 Past Feedback

The following statements are examples of what previous students have said about this course:

- Very challenging material, but it was presented very professionally.
- Matthew this year went out of his way to create podcast summaries of the lectures. They were extremely helpful for me - a 15 minute summary of a 3 hr lecture - incredibly helpful in my revision time.
- Results available faster than ever - very quick response with clear feedback, and even examples of 'best performance', that's something I've often wanted.
- Information is very relevant and connected it to real world situations.
- I am impressed by the skills I have learnt.
- The ongoing quiz keeps us up to date with material
- Explored avenues to make the material accessible and understandable.

### 6.2 Improvements made

Examples of how student feedback has been incorporated into this course include:

- Students responded favourably to the block-mode teaching approach. Part-time students found it much easier to incorporate work and study commitments.
- Students found group assignments to be difficult to organise, and many groups experienced difficulties with 'free-riders'. As a result, the group work component has been replaced with a number of smaller individual assignments.
- Students preferred early access to lecture notes, thus these items will be posted onto Blackboard seven days before the timetabled lecture.
- Students found peer-assisted learning to be useful, as such a Blackboard discussion board will be established early in the semester. Students are encouraged to post all queries on this discussion board and participate actively in discussions. The board will be monitored regularly.
- A unit of study evaluation will be conducted at the end of the semester during lectures. Feedback will be used to make changes to improve the unit of study.

### 6.3. How feedback will be collected

Please note that students are, at all times, encouraged to provide their teaching staff with feedback on course material, lecture notes, assessment items, or anything relevant to their learning and enjoyment of this course. Teaching staff sincerely appreciate suggestions on how the course may be improved, as well as comments on what is working well. Students will also have the opportunity to provide feedback via Unit of Study Evaluation forms at the end of the semester.

## 7. Topic schedule

### 7.1 Lectures

Topic	Date	Topic	Required Reading (See Section 4)	Assessments Due (See Section 3)
1	01 March	Introduction and Basic Data	<ul style="list-style-type: none"> <li>• Topic 1 of textbook</li> <li>• Intro to Statistics Guide</li> </ul>	
2	15 March	Linear Regression	<ul style="list-style-type: none"> <li>• Topic 2 of textbook</li> </ul>	
3	29 March	Regression Diagnostics	<ul style="list-style-type: none"> <li>• Topic 2 of textbook</li> </ul>	
-	<b>12 April</b>	<b>Computer Exam Due</b>	<ul style="list-style-type: none"> <li>• <b>Revise notes and text</b></li> </ul>	<b>Computer Exam</b>
4	10 May	Linear Programming	<ul style="list-style-type: none"> <li>• Topic 3 of textbook</li> <li>• Topic 4 of textbook</li> </ul>	
5	24 May	Simulation Modelling	<ul style="list-style-type: none"> <li>• Topic 5 of textbook</li> </ul>	
-	<b>03 June</b>	<b>Group Assignment Due</b>	<ul style="list-style-type: none"> <li>• <b>Revise notes and text</b></li> </ul>	<b>Group Assignment</b>

### 7.2 Workshops

Topic	Date*	Topic	Required Reading (See Section 4)	Assessments Due (See Section 3)
1	02 March 03 March	Introduction to Excel and Basic Data Analysis	<ul style="list-style-type: none"> <li>• Lecture 1 notes</li> <li>• Ch. 1 to 6 of Excel Guide</li> </ul>	MC Quiz 1
2	16 March 17 March	Introduction to SPSS and Basic Data Analysis	<ul style="list-style-type: none"> <li>• Lecture 1 notes</li> <li>• Ch. 7 of Excel Guide</li> </ul>	MC Quiz 2
3	30 March 31 March	Introduction to Regression	<ul style="list-style-type: none"> <li>• Lecture 2 notes</li> </ul>	
4	13 April 14 April	Advanced Regression Modelling	<ul style="list-style-type: none"> <li>• Lecture 3 notes</li> </ul>	MC Quiz 3
5	11 May 12 May	Linear Programming	<ul style="list-style-type: none"> <li>• Lecture 4 notes</li> <li>• Ch. 8-10 of Excel Guide</li> </ul>	MC Quiz 4
6	25 May 26 May	Simulation Modelling	<ul style="list-style-type: none"> <li>• Lecture 5 notes</li> <li>• Ch. 11-13 of Excel Guide</li> </ul>	MC Quiz 5

\* Workshops are held in four sessions over two days. Students attend one session as per their official timetable.