



# STAT321

## Logistics and Project Management

S1 Day 2014

*Statistics*

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#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

Unit Convenor

Kj Byun

[kj.byun@mq.edu.au](mailto:kj.byun@mq.edu.au)

Contact via [kj.byun@mq.edu.au](mailto:kj.byun@mq.edu.au)

Credit points

3

Prerequisites

Corequisites

STAT379

Co-badged status

Unit description

Stat321 is a three credit point Capstone unit for Decisions Science Major offered by the Department of Statistics. It consists of the two modules – Project Management followed by Logistics. In the study of Project Management topics include Network Diagramming Techniques in Scheduling, Risk Analysis including Classic & Non-Classic PERT model, Time Limited Scheduling (Resource Levelling), Resource limited Scheduling, Goldratt's Critical Chain Scheduling, Time-cost Tradeoffs and Project Selection. Practical applications will be undertaken using Microsoft Project. Also students will be introduced to new learning software developed by Jan Davos (former student of stat321) and Kj Byun (convenor of the unit), called AMUN. Logistics will include the following topics: Supply Chain Management, Push and Pull distributions, and Materials Management. Whilst it is open to any students having successfully completed Stat279, it is a compulsory unit for students majoring in the Decision Science. The combination of appropriate units will lead to a degree that will equip the graduate with the necessary skills required to solve practical real-world problems.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

On successful completion of this unit, you will be able to:

understand the difference between real life project and process

explain the meaning of common terms that are used in project management

apply a range of statistical techniques and logical thinking in project scheduling  
use Microsoft Project 2010 to plan, schedule and monitor large projects  
communicate the results of planning and scheduling of a project clearly  
appreciate the role of logistics in industry including project management and supply chain management  
continue any future business decision analysis studies with increased confidence

## Assessment Tasks

Name	Weighting	Due
<u>Tutorial Participation</u>	10%	Thursday from week 2
<u>Project Outline</u>	5%	26th March (Week 4)
<u>Mid-Semester Test</u>	13%	7th April (Week 6)
<u>Assignment</u>	12%	28th May (Week 11)
<u>Final Examination</u>	60%	16th June – Friday 4th July

### Tutorial Participation

Due: **Thursday from week 2**

Weighting: **10%**

To obtain full marks you need to attend and participate in every tutorial. You may be asked to submit some week's tutorial exercises.

On successful completion you will be able to:

- understand the difference between real life project and process
- explain the meaning of common terms that are used in project management
- apply a range of statistical techniques and logical thinking in project scheduling
- use Microsoft Project 2010 to plan, schedule and monitor large projects
- communicate the results of planning and scheduling of a project clearly
- appreciate the role of logistics in industry including project management and supply chain management
- continue any future business decision analysis studies with increased confidence

### Project Outline

Due: **26th March (Week 4)**

Weighting: **5%**

Students will discuss with other group members of their unique project ideas, write up the proposal and deliver it to the class for feedback during week 4 lecture. All team members must be present or else a mark of zero will be awarded.

On successful completion you will be able to:

- understand the difference between real life project and process
- explain the meaning of common terms that are used in project management
- appreciate the role of logistics in industry including project management and supply chain management
- continue any future business decision analysis studies with increased confidence

## Mid-Semester Test

Due: **7th April (Week 6)**

Weighting: **13%**

- The test will be held during the lecture time on **7<sup>th</sup> April** (week 6) and will commence at **3:10pm**.
- The test will cover all material up to and including the end of **Week 5**. It will be of 2 hours duration.
- In the test you will be provided with relevant tables but *no* formulae will be given. However, you will be able to bring into the test **one piece of paper up to A4 size** on which you may **write** anything you like on **one side only**.

On successful completion you will be able to:

- understand the difference between real life project and process
- explain the meaning of common terms that are used in project management
- apply a range of statistical techniques and logical thinking in project scheduling
- communicate the results of planning and scheduling of a project clearly
- continue any future business decision analysis studies with increased confidence

## Assignment

Due: **28th May (Week 11)**

Weighting: **12%**

- Assignment is **COMPULSORY** and late assignments will *not* be accepted for credit.
- Extension may be given in exceptional circumstances. An extension will not be considered unless the student applies for special consideration.

- Your assignment must be **word-processed** or it will automatically receive zero marks. The presentation of the layout of your assignment will have some bearing on the mark you receive.
- *You need to hand the assignment in at the beginning of the lecture on the due date*, and I will return marked assignments as soon as possible.
- In addition to being an assessment task, the assignment is meant to be a learning device so that marks will be awarded for the level of attempt made, presentation and logical answers.
- In addition, your effort in this component together with your attendance at the lectures and tutorials will be used in deciding the grades of those students who are close to a grade borderline or who have requested special consideration.

On successful completion you will be able to:

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## Final Examination

Due: **16th June – Friday 4th July**

Weighting: **60%**

- A 3 hour final examination for this unit will be held during the University Examination period.
- The final examination will cover all topics dealt within the unit.
- In this examination you will be provided with relevant tables but no formulae will be given. However, you will be able to bring into the examination **one piece of paper up to A4 size** on which you may **write** anything you like on **both sides**. No other notes or books are allowed.

The University Examination period in First Half Year 2014 is from Monday 16<sup>th</sup> June – Friday 4<sup>th</sup> July.

You are expected to present yourself for examination at the time and place designated in the University Examination Timetable and this includes Saturdays. The timetable will be available in Draft form approximately eight weeks before the commencement of the examinations and in final

form approximately four weeks before the commencement of the examinations.

<http://www.timetables.mq.edu.au/exam/>

The only exception to not sitting an examination (or the mid semester test) at the designated time is because of documented illness or unavoidable disruption. In these circumstances you may wish to consider applying for Special Consideration. Information about unavoidable disruption and the special consideration process is available at

[http://www.mq.edu.au/policy/docs/special\\_consideration/policy.html](http://www.mq.edu.au/policy/docs/special_consideration/policy.html)

[http://www.mq.edu.au/policy/docs/special\\_consideration/procedure.html](http://www.mq.edu.au/policy/docs/special_consideration/procedure.html)

Student Request to the Faculty of Science web page for Special Consideration Applications is

[http://web.science.mq.edu.au/undergraduate\\_programs/current/admin\\_central/](http://web.science.mq.edu.au/undergraduate_programs/current/admin_central/)

If a Supplementary Examination is granted as a result of the Special Consideration process the examination will be scheduled after the conclusion of the official examination period.

You are advised that it is Macquarie University policy not to set early examinations for individuals or groups of students. All students are expected to ensure that they are available until the end of the teaching semester that is the final day of the official examination period.

On successful completion you will be able to:

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- use Microsoft Project 2010 to plan, schedule and monitor large projects
- communicate the results of planning and scheduling of a project clearly
- appreciate the role of logistics in industry including project management and supply chain management
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## **Delivery and Resources**

### **COREQUISITES**

in 2013, corequisite of Stat379 was introduced to comply with capstone unit requirements as Stat321 is the capstone unit for the Decision Science major but this requirement is not necessary and will be dropped from 2015.

### **CLASSES**

Lectures:

- Length: One 3 hour beginning in Week 1
- Location: C5A 313
- Time: Wednesday 3pm – 6pm

Tutorial:

- Length: One 1 hour beginning in Week 2
- Location: E4B 102
- Time: Thursday 1pm, 2pm

The timetable for classes can be found on the University web site at:

<http://www.timetables.mq.edu.au/>

Attendance at the lectures is optional but may be monitored to aid in deciding the grades of those students who are close to a grade borderline or who have requested special consideration.

## **TEACHING AND LEARNING STRATEGY**

- The lecture and tutorial handouts will be available at the website before the lecture/tutorial is given, but may be corrected after the lecture/tutorial.
- In each week, lectures will be conducted following the structure of the lecture handout. It will contain examples and exercises mostly without solution.
- The solution to these examples and exercises will be covered in the lecture.
- Some additional exercises may be discussed during the lecture time.
- Students are encouraged to participate in the lecture discussion and ask questions.
- In tutorial, you will work individually and in groups with your fellow students. We will cover additional and revision exercises as well as learning to use Microsoft Project 2010.
- We also expect that you will make a good attempt at the assignment, mid semester test and final exam.

## **TECHNOLOGY USED AND REQUIRED**

The web page for this unit can be found at:

[www.stat.mq.edu.au/undergraduate\\_programs/stat\\_units/stat\\_units300/stat321/](http://www.stat.mq.edu.au/undergraduate_programs/stat_units/stat_units300/stat321/)

Alternatively, you can get there conveniently from the Department of Statistics website [www.stat.mq.edu.au/](http://www.stat.mq.edu.au/) by selecting Undergraduate Programs, then Statistics Units and then Stat321.

The iLearn site for STAT321 and can be accessed at: <https://ilearn.mq.edu.au/login/MQ/> (or from the Stat321 web page). Students should check the site regularly to find the latest

announcements, lecture notes, tutorial sheets, and assignments.

You will be asked for your Student ID number and myMQ Portal password. If you have any problem accessing this website, you should go to the Online Teaching Facility support web page at <http://online.mq.edu.au/docs/tecinf.html> .

## REQUIRED AND RECOMMENDED TEXTS AND/OR MATERIALS

Some useful references include:

Klasterin Ted. *“Project Management Tools and Trade –Offs”* John Wiley, 2004

[[HD69.P75 K57 200](#)]

4]

Pinto Jeffrey K. *“Project Management Achieving Competitive Advantage and MS Project”*  
Prentice Hall, 2010. [HD69.P75 P5498 2010]

Meredith. *“Project Management, A Managerial Approach (4th Ed)”* [HD69.P75.M47]

Kerzner, Harold. *“Project management: a systems approach to planning, scheduling and controlling”* [HD69.P75.K47/2001]

Rosenau, Milton, D. *“Successful project management: a step-by-step approach with practical examples”* [HD69.P75.R67/1998]

Tatnall, A. *“Project management: a guide to Microsoft Project”* [HD69.P75.T38/1996]

BALLOU Ron H. *“Business Logistics Management”* [HD38.5.B35/1998]

GILMOUR P. *“Logistics Management”* [HF5415.12.A8.G476]

SHAPIRO R. *“Logistics Strategy”* [HD38.5.S53/1985]

TYNDALL G. *“Supercharging Supply Chains”* [HD38.5.s895/1998]

BLOOMBERG David. *“The Management of Integrated Logistics”* [HD38.5.B55/1998]

## Unit Schedule

### STAT 321 SCHEDULE (D1 2014)

Week	Lecture Date	Topic	Assessment due (Wednesday 3pm)
1	5 March	Introduction to Project Management	



2	12 March	Creating a project schedule and network Scheduling	
3	19 March	CPM and PERT	
4	26 March	Time Limited Scheduling	<b>Project Outline</b>
5	2 April	Resources Limited Scheduling	
6	9 April	<b>Mid-Semester Test</b>	
<b>Mid Semester Break (Saturday 12<sup>th</sup> April – Sunday 27<sup>th</sup> April)</b>			
7	30 April	Time-cost trade analysis in a project environment	
8	7 May	Critical Chain Project Management	
9	14 May	Introduction to Logistics Systems	
10	21 May	Development and Growth of Business Logistics	
11	28 May	The Supply-Chain Concept – Demand Driven Logistics	<b>Assignment</b>
12	4 June	Logistics of Information Systems	
13	11 June	Revision	

## Learning and Teaching Activities

### Lecture

Presentation of new material via examples, discussion and hands-on exercises.

### Tutorial/Practical

Practical application of project scheduling and managing via Micosoft Project 2010, Amun and Microsoft Excel. Some computer simulation games for understanding supply chain management.

### Group Project/Assignment

Assessment task where students can apply the project scheduling concepts ann techniques

learned in practice as a team.

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy [http://mq.edu.au/policy/docs/academic\\_honesty/policy.html](http://mq.edu.au/policy/docs/academic_honesty/policy.html)

Assessment Policy <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Grievance Management Policy [http://mq.edu.au/policy/docs/grievance\\_management/policy.html](http://mq.edu.au/policy/docs/grievance_management/policy.html)

Disruption to Studies Policy [http://www.mq.edu.au/policy/docs/disruption\\_studies/policy.html](http://www.mq.edu.au/policy/docs/disruption_studies/policy.html) *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: [https://students.mq.edu.au/support/student\\_conduct/](https://students.mq.edu.au/support/student_conduct/)

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills ([mq.edu.au/learningskills](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

## IT Help

For help with University computer systems and technology, visit <http://informatics.mq.edu.au/help/>.

When using the University's IT, you must adhere to the [Acceptable Use Policy](#). The policy applies to all who connect to the MQ network including students.

## Graduate Capabilities

### Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

#### Learning outcomes

- use Microsoft Project 2010 to plan, schedule and monitor large projects
- communicate the results of planning and scheduling of a project clearly
- appreciate the role of logistics in industry including project management and supply chain management
- continue any future business decision analysis studies with increased confidence

#### Assessment tasks

- Project Outline
- Assignment

#### Learning and teaching activities

- Presentation of new material via examples, discussion and hands-on exercises.
- Practical application of project scheduling and managing via Microsoft Project 2010, Amun and Microsoft Excel. Some computer simulation games for understanding supply chain management.
- Assessment task where students can apply the project scheduling concepts and techniques learned in practice as a team.

## Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

### Learning outcomes

- understand the difference between real life project and process
- explain the meaning of common terms that are used in project management
- apply a range of statistical techniques and logical thinking in project scheduling
- use Microsoft Project 2010 to plan, schedule and monitor large projects
- communicate the results of planning and scheduling of a project clearly
- appreciate the role of logistics in industry including project management and supply chain management
- continue any future business decision analysis studies with increased confidence

### Assessment tasks

- Tutorial Participation
- Project Outline
- Mid-Semester Test
- Assignment
- Final Examination

### Learning and teaching activities

- Presentation of new material via examples, discussion and hands-on exercises.
- Practical application of project scheduling and managing via Microsoft Project 2010, Amun and Microsoft Excel. Some computer simulation games for understanding supply chain management.
- Assessment task where students can apply the project scheduling concepts and techniques learned in practice as a team.

## Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to

critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

## **Learning outcomes**

- apply a range of statistical techniques and logical thinking in project scheduling
- use Microsoft Project 2010 to plan, schedule and monitor large projects
- communicate the results of planning and scheduling of a project clearly
- continue any future business decision analysis studies with increased confidence

## **Assessment tasks**

- Tutorial Participation
- Project Outline
- Mid-Semester Test
- Assignment
- Final Examination

## **Learning and teaching activities**

- Presentation of new material via examples, discussion and hands-on exercises.
- Practical application of project scheduling and managing via Microsoft Project 2010, Amun and Microsoft Excel. Some computer simulation games for understanding supply chain management.
- Assessment task where students can apply the project scheduling concepts and techniques learned in practice as a team.

## **Problem Solving and Research Capability**

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

## **Learning outcomes**

- apply a range of statistical techniques and logical thinking in project scheduling
- use Microsoft Project 2010 to plan, schedule and monitor large projects
- continue any future business decision analysis studies with increased confidence

## Assessment tasks

- Tutorial Participation
- Mid-Semester Test
- Assignment

## Learning and teaching activities

- Practical application of project scheduling and managing via Microsoft Project 2010, Amun and Microsoft Excel. Some computer simulation games for understanding supply chain management.
- Assessment task where students can apply the project scheduling concepts and techniques learned in practice as a team.

## Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

## Learning outcomes

- explain the meaning of common terms that are used in project management
- use Microsoft Project 2010 to plan, schedule and monitor large projects
- communicate the results of planning and scheduling of a project clearly
- continue any future business decision analysis studies with increased confidence

## Assessment tasks

- Project Outline
- Assignment

## Learning and teaching activities

- Assessment task where students can apply the project scheduling concepts and techniques learned in practice as a team.

## Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

## Learning outcomes

- communicate the results of planning and scheduling of a project clearly
- appreciate the role of logistics in industry including project management and supply chain management
- continue any future business decision analysis studies with increased confidence

## Assessment tasks

- Tutorial Participation
- Project Outline
- Mid-Semester Test
- Assignment
- Final Examination

## Learning and teaching activities

- Presentation of new material via examples, discussion and hands-on exercises.
- Practical application of project scheduling and managing via Micosoft Project 2010, Amun and Microsoft Excel. Some computer simulation games for understanding supply chain management.
- Assessment task where students can apply the project scheduling concepts and techniques learned in practice as a team.

## Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

## Learning outcomes

- apply a range of statistical techniques and logical thinking in project scheduling
- communicate the results of planning and scheduling of a project clearly
- continue any future business decision analysis studies with increased confidence

## Assessment tasks

- Tutorial Participation
- Project Outline

- Assignment
- Final Examination

## **Learning and teaching activities**

- Presentation of new material via examples, discussion and hands-on exercises.
- Practical application of project scheduling and managing via Microsoft Project 2010, Amun and Microsoft Excel. Some computer simulation games for understanding supply chain management.
- Assessment task where students can apply the project scheduling concepts and techniques learned in practice as a team.

## **Socially and Environmentally Active and Responsible**

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

## **Learning outcomes**

- apply a range of statistical techniques and logical thinking in project scheduling
- use Microsoft Project 2010 to plan, schedule and monitor large projects
- communicate the results of planning and scheduling of a project clearly
- appreciate the role of logistics in industry including project management and supply chain management
- continue any future business decision analysis studies with increased confidence

## **Assessment tasks**

- Tutorial Participation
- Project Outline
- Mid-Semester Test
- Assignment
- Final Examination

## **Learning and teaching activities**

- Presentation of new material via examples, discussion and hands-on exercises.
- Practical application of project scheduling and managing via Microsoft Project 2010, Amun and Microsoft Excel. Some computer simulation games for understanding supply chain management.



- Assessment task where students can apply the project scheduling concepts and techniques learned in practice as a team.