![Macquarie University Sydney Australia logo]

# LING337

## Language of Science and Technology

S1 Day 2016

*Dept of Linguistics*

# Contents

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# General Information

Unit convenor and teaching staff
Unit Convenor
Jean Brick
jean.brick@mq.edu.au
Contact via jean.brick@mq.edu.au
C5A 504

Administration
Margaret Wood
margaret.wood@mq.edu.au

Credit points
3

Prerequisites
39cp

Corequisites

Co-badged status

Unit description
This unit examines the characteristics of the language of science, mathematics and technology, exploring the different ways in which language is used in professional, popular and pedagogic texts. Special reference is made to changing language use at the secondary and tertiary levels in both English and second or foreign language settings. The increasing use of visual imagery, the influence of web-based forms of scientific communication and the role of metaphor in science are also examined. The unit concludes with a discussion of the implications of the characteristics of the language of science for teachers of both language and science. The unit is of interest not only to students who are looking to follow careers in second or foreign language teaching and to those who are studying science or mathematics with a view to teaching, but also to anyone interested in how language responds to the challenges of different purposes and audiences.

## 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:

Discuss the ways in which language constructs and represents the scientific world view

Describe the differences between the representations of scientific knowledge for professional, popular and pedagogic audiences

Analyse the way that language is used in texts aimed a professional, popular and professional audiences

Discuss the role of multimedia in professional, popular and pedagogic scientific contexts

Analyse the role of visual communication in print-based and electronic texts

Discuss the role of figurative language in professional, popular and pedagogic scientific contexts

Analyse changes in the language of science in scientific textbooks from early secondary to secondary to tertiary level

# Assessment Tasks

| Name | Weighting | Due |
|------|-----------|-----|
| Summary | 10% | March 18 2016 |
| Text analysis | 40% | April 15 2016 |
| Essay | 40% | May 30 2016 |
| Poster | 10% | 6 June 2016 |

## Summary

Due: **March 18 2016**
Weighting: **10%**

Summary of journal article (300 words) plus personal response (100 - 200 words)

On successful completion you will be able to:
• Discuss the ways in which language constructs and represents the scientific world view
• Describe the differences between the representations of scientific knowledge for professional, popular and pedagogic audiences

## Text analysis

Due: **April 15 2016**
Weighting: **40%**

Comparative analysis of texts differing in genre and audience: 2000 words

On successful completion you will be able to:
- Discuss the ways in which language constructs and represents the scientific world view
- Describe the differences between the representations of scientific knowledge for professional, popular and pedagogic audiences
- Analyse the way that language is used in texts aimed a professional, popular and professional audiences
- Analyse the role of visual communication in print-based and electronic texts
- Discuss the role of figurative language in professional, popular and pedagogic scientific contexts
- Analyse changes in the language of science in scientific textbooks from early secondary to secondary to tertiary level

# Essay

Due: **May 30 2016**
Weighting: **40%**

Essay on a topic of interest: 2000 words

On successful completion you will be able to:
- Discuss the ways in which language constructs and represents the scientific world view
- Analyse the way that language is used in texts aimed a professional, popular and professional audiences
- Discuss the role of multimedia in professional, popular and pedagogic scientific contexts
- Analyse the role of visual communication in print-based and electronic texts
- Discuss the role of figurative language in professional, popular and pedagogic scientific contexts
- Analyse changes in the language of science in scientific textbooks from early secondary to secondary to tertiary level

# Poster

Due: **6 June 2016**
Weighting: **10%**

Report of participation in citizen science project

On successful completion you will be able to:
- Discuss the ways in which language constructs and represents the scientific world view
- Analyse the role of visual communication in print-based and electronic texts

# Delivery and Resources

Seminar Time: Monday 3.00 - 6.00

Room:  C5A226

**Technologies used:**

iLearn

# Unit Schedule

| Week | Topic |
|------|-------|
| 1 | Introduction: Is there a language of science and technology? Why does it matter? |
| 2 | Developing an understanding of genre in science |
| 3 | What makes scientific language scientific? Technical language, nominal groups and nominalisation |
| 4 | Organising information in scientific texts |
| 5 | No lecture (Easter Monday) |
| 6 | Interacting with readers: Expressing attitude and identity |
| 7 | Anzac Day: recorded lecture (iLearn)<br><br>Describing the discourse of professional science |
| 8 | Visual literacy in science |
| 9 | Metaphor and analogy in science |
| 10 |  Science in the news: TV and newspapers |
| 11 | Science on TV: Documentaries |
| 12 | Developing understanding of the language of science in primary and secondary schools |
| 13 | Poster presentations |

# 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

**New Assessment Policy in effect from Session 2 2016** http://mq.edu.au/policy/docs/assessment/policy_2016.html. For more information visit http://students.mq.edu.au/events/2016/07/19/new_assessment_policy_in_place_from_session_2/

Assessment Policy prior to Session 2 2016 http://mq.edu.au/policy/docs/assessment/policy.html

Grading Policy prior to Session 2 2016 http://mq.edu.au/policy/docs/grading/policy.html

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

Complaint Management Procedure for Students and Members of the Public http://www.mq.edu.au/policy/docs/complaint_management/procedure.html

Disruption to Studies Policy 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/

## Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit ask.mq.edu.au.

# 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) 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

## IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/ offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.

# Graduate Capabilities

## 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

- Discuss the role of multimedia in professional, popular and pedagogic scientific contexts
- Analyse the role of visual communication in print-based and electronic texts

### Assessment tasks

- Essay
- Poster

## 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

- Analyse the way that language is used in texts aimed a professional, popular and

professional audiences

- Analyse changes in the language of science in scientific textbooks from early secondary to secondary to tertiary level

## Assessment task

- Text analysis

# Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

## Learning outcomes

- Discuss the ways in which language constructs and represents the scientific world view
- Discuss the role of multimedia in professional, popular and pedagogic scientific contexts

## Assessment tasks

- Text analysis
- Poster

# 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

- Discuss the ways in which language constructs and represents the scientific world view
- Describe the differences between the representations of scientific knowledge for professional, popular and pedagogic audiences
- Analyse the way that language is used in texts aimed a professional, popular and professional audiences
- Discuss the role of multimedia in professional, popular and pedagogic scientific contexts

- Analyse the role of visual communication in print-based and electronic texts
- Discuss the role of figurative language in professional, popular and pedagogic scientific contexts
- Analyse changes in the language of science in scientific textbooks from early secondary to secondary to tertiary level

## Assessment tasks

- Summary
- Text analysis
- Essay

# 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

- Discuss the ways in which language constructs and represents the scientific world view
- Describe the differences between the representations of scientific knowledge for professional, popular and pedagogic audiences
- Analyse the way that language is used in texts aimed a professional, popular and professional audiences
- Discuss the role of multimedia in professional, popular and pedagogic scientific contexts
- Analyse the role of visual communication in print-based and electronic texts
- Discuss the role of figurative language in professional, popular and pedagogic scientific contexts
- Analyse changes in the language of science in scientific textbooks from early secondary to secondary to tertiary level

## Assessment tasks

- Text analysis
- Essay

# 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

- Discuss the ways in which language constructs and represents the scientific world view
- Analyse the way that language is used in texts aimed a professional, popular and professional audiences

## Assessment tasks

- Text analysis
- Essay

# 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

- Discuss the ways in which language constructs and represents the scientific world view
- Describe the differences between the representations of scientific knowledge for professional, popular and pedagogic audiences
- Analyse the way that language is used in texts aimed a professional, popular and professional audiences
- Discuss the role of multimedia in professional, popular and pedagogic scientific contexts
- Analyse the role of visual communication in print-based and electronic texts
- Discuss the role of figurative language in professional, popular and pedagogic scientific contexts
- Analyse changes in the language of science in scientific textbooks from early secondary to secondary to tertiary level

## Assessment tasks

- Summary
- Text analysis
- Essay

- Poster

# 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

- Discuss the ways in which language constructs and represents the scientific world view
- Describe the differences between the representations of scientific knowledge for professional, popular and pedagogic audiences
- Analyse the way that language is used in texts aimed a professional, popular and professional audiences
- Discuss the role of multimedia in professional, popular and pedagogic scientific contexts
- Analyse the role of visual communication in print-based and electronic texts
- Discuss the role of figurative language in professional, popular and pedagogic scientific contexts

## Assessment task

- Poster

# 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

- Describe the differences between the representations of scientific knowledge for professional, popular and pedagogic audiences
- Analyse the way that language is used in texts aimed a professional, popular and professional audiences
- Discuss the role of multimedia in professional, popular and pedagogic scientific contexts
- Discuss the role of figurative language in professional, popular and pedagogic scientific

contexts

## Assessment tasks

- Text analysis
- Poster