BBE 303

Independent Research Project in Brain, Behaviour and Evolution

S2 Day 2014

Dept of Biological Sciences

Contents

General Information

Unit convenor and teaching staff
Unit Convenor
Andrew Barron
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Other Staff
Katherine McClellan
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Credit points
6

Prerequisites
39cp including (BBE200 and (BIOL235 or PSY222 or STAT270 or STAT271)) and GPA of 2.5 and permission of Executive Dean of Faculty

Corequisites

Co-badged status

Unit description
In this highly selective individualised unit, students carry out one research project in the laboratory of a staff member. Students are individually supervised, as part of the research community, and are expected to put in much effort, with the unit being worth double the usual credit points. The unit provides an excellent opportunity to do hands-on research. Laboratory and/or field projects may be conducted.

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:

1. Learn an advanced understanding of a chosen area of behavioural research
2. Critique and integrate information from primary research papers
3. Master practical skills for conducting behavioural research
4. Conduct a long-term independent scientific study

5. Generate hypotheses, and design new experiments to test hypotheses
6. Present experimental findings as a paper written in the style of a recognised scientific journal
7. Present a research project orally
8. Contribute as part of a research team

General Assessment Information

Unit completion requirements

To pass this subject you must achieve all of the following.

- **Receive a final overall mark of >50%.**
- **Submit a research proposal**
- **Present a research seminar**
- **Engage with the research project to the satisfaction of the project supervisor. As a guide, supervisors will expect students to invest a minimum of 15 h per week to their projects.**
- **Submit a project report**

Assignment description

Project outline (5 % of final mark)

Addresses graduate capabilities 1, 2 and 4

Produce a brief outline of your research project detailing the hypothesis to be tested, the experimental approach, the nature of data collected, plan for analysis and a suggested timeline. Maximum 1 side of A4 paper. The intention of this assessment task is to give early feedback to students on their planned project.

Your research plan will be assessed on

1. Formulation of a clear question and hypothesis;
2. Feasibility of the research plan;
3. A plan for analysis and statistics;
4. Overall communication of your work.

Research Seminar (20 % of final mark)

Addresses graduate capabilities 1, 2 and 4

You should deliver a 20-minute presentation of your project structured as an academic conference presentation, followed by a period for questions. Your oral presentation should be

accompanied by slides prepared in either Powerpoint or Keynote. This will be an open presentation, meaning any member of the university community may attend, and you should anticipate presenting to the majority of the BBE academic and student community.

This should also be seen as an opportunity to gain constructive comment and feedback from your examiners and peers, which may improve your thesis.

What makes a good oral presentation?

1. A clear statement of your aims and the questions you addressed;
2. A logical and coherent progression of ideas;
3. A concise but unhurried presentation. Don't try to pack too much in;
4. Clear visuals that complement the spoken presentation;.
5. Minimal text and clear, simple illustrations in slides;
6. Careful explanation of data and statistical methods;
7. Remember that practice makes perfect!

Supervisor assessment (15 % of final mark)

Addresses graduate capabilities 1-6

Your supervisor will be asked to report on your performance. Students are expected to commit an average of 12 h per week to their research project and supervisors will report on students:

1. **diligence and commitment,**
2. **punctuality and dependability,**
3. **integration and cooperation with the research team,**
4. **practical experimental skills,**
5. **capacity to follow instruction,**
6. **capacity for independent creative thought,**
7. **initiative.**

Project report (60 % of final mark)

Addresses graduate capabilities 1 - 6

The project report should be written and formatted as a *submission-ready manuscript* in the style of a research paper written for the journal *Animal Behaviour*. Write your report for a scientifically

literate but non-specialist audience. This must be fully referenced following the referencing style of the journal. A copy of the formatting guidelines for Animal Behaviour can be found at:

http://www.elsevier.com/journals/animal-behaviour/0003-3472/guide-for-authors

Note that there is an important difference between the format of a submission ready manuscript and a published paper. You are asked to provide the former.

The thesis must not exceed 3000 words inclusive of references.

What makes a good project report?

1. A clear definition of the problem;
2. Careful documentation of methods and materials, and a critical appraisal of methods used where appropriate;
3. Appropriate and accurate analysis of the data;
4. Proper interpretation of results leading to justifiable conclusions;
5. Critical discussion of results in the context of previous work in the field;
6. Evidence of ability to perform experiments, make good quality preparations or accurate observations as appropriate;
7. Ability to write a well organised report in a clear succinct style;
8. Precise spelling, grammar and use of English;
9. Use a citation program to store a library of your references and format your citations
10. Clear and meaningful figures and illustrations.

Project report examination criteria

When grading, your project report examiners will consider:

1. Your demonstrated understanding of the topic;
2. Design and execution of the project;
3. Discussion of results in the context of relevant literature;
4. Overall communication of your work.

Assignment submission

All assignments must be submitted electronically via ilearn. Use the turnitin links through the assignment section of the iLearn page.

Extensions and penalties

10% of the mark allocated for the assignment will be deducted for every 24 h period (or part thereof) that any work is submitted past the nominated deadline.

The deadlines for assignments are not negotiable. Only a medical certificate or a letter with appropriate supporting documents outlining other serious, extenuating circumstances can be used to submit an assignment after the due date without penalty. All applications for special consideration or extension must be sought *before the due date* unless this is absolutely impossible. **All applications for extensions of deadlines must be submitted to the course chair.**

Returning assessment tasks

Assessment tasks will be returned via iLearn.

Assessment Tasks

Name	Weighting	Due
research proposal	5%	28 August
oral presentation	20%	6 November
supervisor assessment	15%	17 November
project report	60%	13 November

research proposal

Due: **28 August**
Weighting: **5%**

A one page outline of your chosen research project

On successful completion you will be able to:

- 1. Learn an advanced understanding of a chosen area of behavioural research
- 5. Generate hypotheses, and design new experiments to test hypotheses

oral presentation

Due: **6 November**
Weighting: **20%**

An oral presentation of the research project

On successful completion you will be able to:

- 7. Present a research project orally

supervisor assessment

Due: **17 November**
Weighting: **15%**

The project supervisor evaluates a student's performance, lab participation and engagement with the research project.

On successful completion you will be able to:

- 3. Master practical skills for conducting behavioural research
- 4. Conduct a long-term independent scientific study
- 8. Contribute as part of a research team

project report

Due: **13 November**
Weighting: **60%**

A written report of the research project in the form of a scientific paper

On successful completion you will be able to:

- 1. Learn an advanced understanding of a chosen area of behavioural research
- 2. Critique and integrate information from primary research papers
- 6. Present experimental findings as a paper written in the style of a recognised scientific journal

Delivery and Resources

Website

Unit outline, workshop notes and course notices will be distributed via iLearn

http://ilearn.mq.edu.au

iLearn is a web-based computer mediated communication package and can be accessed by most web browsers from inside or outside the University. iLearn and email via the official Macquarie Student e-mail address will be the principle method of communication in this subject.

You must use iLearn for:

- Regularly checking subject announcements;
- Downloading course materials;
- Downloading reference materials;

- Checking your grades.

The iLearn log-in page is: http://ilearn.mq.edu.au/. Your user name is your student number. If you are having trouble accessing your online unit due to a disability or health condition, please go to the Student Services Website at http://sss.mq.edu.au/equity/about for information on how to get assistance. If you are having problems logging on, If you cannot log in after ensuring you have entered your username and password correctly, you should contact Student IT Help.

Unit Schedule

UNIT SCHEDULE

Website

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Timetable

BBE 303 differs from most undergraduate units in that there are minimal contact hours; instead students are expected to invest about 15 h per week on their research project. The schedule will depend entirely on the nature of the research undertaken and should be discussed with project supervisors. Seminars are held in Andrew Barron's office in W19F.

Seminar topics.

Week	Date / time	Topic Topic	Convenor /location
1	7th August 10 am	Experimental design 1	Barron
2	14th August 10 am	Experimental design 2	Barron
3	21st August 10 am	Experimental design 3	Barron
8	9th October 10 am	Statistics workshop	Barron
11	29th October 10 am	How to write and present a scientific report	Barron
12	6th November 10 am	Student research seminars	Barron

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

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

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/

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://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

- 4. Conduct a long-term independent scientific study
- 8. Contribute as part of a research team

Assessment task

- supervisor assessment

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

- 1. Learn an advanced understanding of a chosen area of behavioural research
- 3. Master practical skills for conducting behavioural research
- 4. Conduct a long-term independent scientific study

Assessment tasks

- research proposal
- supervisor assessment
- project report

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

- 1. Learn an advanced understanding of a chosen area of behavioural research
- 2. Critique and integrate information from primary research papers
- 5. Generate hypotheses, and design new experiments to test hypotheses

Assessment tasks

- research proposal
- project report

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

- 1. Learn an advanced understanding of a chosen area of behavioural research
- 5. Generate hypotheses, and design new experiments to test hypotheses
- 6. Present experimental findings as a paper written in the style of a recognised scientific journal
- 8. Contribute as part of a research team

Assessment tasks

- research proposal
- supervisor assessment
- project report

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

- 4. Conduct a long-term independent scientific study
- 5. Generate hypotheses, and design new experiments to test hypotheses

Assessment tasks

- research proposal
- supervisor assessment

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

- 6. Present experimental findings as a paper written in the style of a recognised scientific journal
- 7. Present a research project orally

Assessment tasks

- oral presentation
- project report

Changes since First Published

Date	Description
14/01/2014	The Prerequisites was updated.