



MEDI741

Research Rotation 1

S2 Day 2017

Department of Biomedical Sciences

Contents

<u>General Information</u>	2
<u>Learning Outcomes</u>	2
<u>Assessment Tasks</u>	3
<u>Delivery and Resources</u>	5
<u>Unit Schedule</u>	6
<u>Learning and Teaching Activities</u>	6
<u>Policies and Procedures</u>	7
<u>Graduate Capabilities</u>	8

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General Information

Unit convenor and teaching staff

Lecturer, Unit convenor

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Level 1, 75 Talavera Road

Credit points

4

Prerequisites

Admission to MRes

Corequisites

Co-badged status

Unit description

This is a shell unit that will provide placements for MRes students in Faculty of Medicine and Health Sciences research laboratories for approximately eleven weeks. Over that period students will become a member of the laboratory; they will be assigned to a senior PhD student to shadow and assist in the development of the student's project. They will have an opportunity to participate in laboratory work, to assist in the acquisition and analysis of data, and to gain insight to the daily working of a research laboratory. Students will participate in laboratory meetings and journal club and present written and oral accounts of their progress. The immersive learning environment of the research laboratory will provide students with access to discipline-specific expertise, and demonstrate the application of the theoretical knowledge obtained in earlier units. The unit will be assessed during the lab rotation period through oral presentations and a written report. The report will take the form of a short communication covering the background, aims and outcomes of their rotation.

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:

Acquire advanced theoretical and practical knowledge of fields of contemporary research.

Gain insight into the day-to-day running of a research group and the responsibilities in research and collaborate in discussion centred around research ideas, methods, and data.

Acquire, analyse, and interpret research data and methods in a way suitable for presentation to the scientific community.

Review and critically evaluate diverse scientific literature and present your findings.

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Research engagement</u>	15%	No	Week 2 to 13
<u>Poster presentation</u>	30%	No	Week 6
<u>Mini-paper submission</u>	30%	No	Week 10
<u>Project proposal</u>	25%	No	Week 13

Research engagement

Due: **Week 2 to 13**

Weighting: **15%**

Research relies on collaboration and day-to-day communication of ideas and progress with colleagues. Each research group will hold regular meetings or informal catch-ups to discuss the progress of the research to date, troubleshoot problems, and plan how next to proceed. You will be required to participate in these meetings / discussions throughout the session. The research group head will assess your level of active participation in these discussions. You will also be required to keep a laboratory notebook recording the research work you have been doing. A copy of this will be submitted and assessed.

Marks will be proportioned evenly amongst the research placements throughout the session.

On successful completion you will be able to:

- Acquire advanced theoretical and practical knowledge of fields of contemporary research.
- Gain insight into the day-to-day running of a research group and the responsibilities in research and collaborate in discussion centred around research ideas, methods, and data.

Poster presentation

Due: **Week 6**

Weighting: **30%**

A 5 minute (+5 minute questions) scientific poster presentation on the work conducted in the first research placement. Times will be strictly adhered to. The poster presentation should summarise the work done in the placement and/or talk about the scope and future directions of the research. The scientific poster will not be printed on paper, but projected using the provided computer/projection system. Posters must be submitted electronically before the presentation. The poster must be of **A0 size**, in **landscape** orientation. Posters can be in Microsoft Powerpoint or PDF format.

On successful completion you will be able to:

- Acquire advanced theoretical and practical knowledge of fields of contemporary research.
- Acquire, analyse, and interpret research data and methods in a way suitable for presentation to the scientific community.
- Review and critically evaluate diverse scientific literature and present your findings.

Mini-paper submission

Due: **Week 10**

Weighting: **30%**

A two page conference proceeding based on the work conducted in the second research placement. The conference proceeding must be in the format of the provided Microsoft Word template, without changing margins, text size or font.

If you have data that you have either generated as part of your work, or data that has been provided to you by your research group, you can use this in your conference proceeding. If you do not have data, then the conference proceeding can describe a research project and detail the methods that would be employed, including a critique of the advantages and disadvantages of the method used to meet the aim of the project.

On successful completion you will be able to:

- Acquire advanced theoretical and practical knowledge of fields of contemporary research.
- Acquire, analyse, and interpret research data and methods in a way suitable for presentation to the scientific community.
- Review and critically evaluate diverse scientific literature and present your findings.

Project proposal

Due: **Week 13**

Weighting: **25%**

A short (500 words or less, excluding references) description of a possible research project based on the research you have been exposed to in the third research placement. It does not have to be a research project that is planned to be conducted by you or others. The description should clearly state:

- the background as to why the research is required
- the aim of the proposed research project.
- the methods that would be employed to meet the aims of the research project.

On successful completion you will be able to:

- Acquire advanced theoretical and practical knowledge of fields of contemporary research.
- Gain insight into the day-to-day running of a research group and the responsibilities in research and collaborate in discussion centred around research ideas, methods, and data.
- Acquire, analyse, and interpret research data and methods in a way suitable for presentation to the scientific community.

Delivery and Resources

- Laboratory heads or supervising researchers will be expected to provide the student with initial reading material (or the sources) relevant to the project.
- Students should use this provided material to actively seek further reading through searching the current literature (e.g. research articles and reviews) using tools such as PubMed, Scopus, and/or GoogleScholar. This material should supplement and extend their understanding of the research topic, and assist in preparation of assessed material.
- Students should keep a laboratory notebook for documentation of their day-to-day work, including details such as experimental methods, observations, results and results analysis, and conclusions. The lab book serves as an important written record in research and may be used to guide future work in your host group. The lab book will remain the property of the research group at the end of the session.

Unit Schedule

Week 1

Course introduction and laboratory induction.

Weeks 2 to 13

Research placements. It is expected that each week, at least one and a half days (approximately 11 hours) be engaged in research activities, whether that be laboratory work, preparation/analysis of data, learning through critical review of literature, or participating in research group discussions.

- **Week 2 to 5** - Research placement 1
- **Week 6 to 9** - Research placement 2
- **Week 10 to 13** - Research placement 3

Learning and Teaching Activities

Course introduction

Conducted in the first week, this activity will provide an overview of the practical format of the unit and the assessment. The various research projects or areas on offer will be introduced. Masters of Research candidates can then choose a research area that they would be interested in participating in. Effort will be made to place Masters of Research candidates in their first preference of research area. However, due to limited places, this can not be guaranteed.

Laboratory induction

An induction to the laboratory environment will be conducted to equip students with the knowledge to work safely in the Faculty laboratory environment. This induction is compulsory and access to the laboratory can not be granted without attendance of the laboratory induction.

Research placements

The various research projects or areas on offer will be made available online (iLearn). Masters of Research candidates can then choose a research area that they would be interested in participating in. Effort will be made to place Masters of Research candidates in their first preference of research area. However, due to limited places, this can not be guaranteed. Activities will be conducted under the supervision of a post-doctoral researcher or senior PhD student. They will either assist with a currently running project, or conduct a small independent project (at the discretion of the laboratory head).

Conference-style presentation of research

A conference proceedings style submission and scientific poster presentation mimic communication of research at a scientific conference. These assessments draw upon the data or knowledge gained in the laboratory placements.

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_2016.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 (in effect until Dec 4th, 2017): http://www.mq.edu.au/policy/docs/disruption_studies/policy.html

Special Consideration Policy (in effect from Dec 4th, 2017): <https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/special-consideration>

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.

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.

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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

PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and

decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

Learning outcome

- Review and critically evaluate diverse scientific literature and present your findings.

Assessment task

- Research engagement

PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

Learning outcome

- Acquire advanced theoretical and practical knowledge of fields of contemporary research.

Assessment tasks

- Research engagement
- Poster presentation
- Mini-paper submission
- Project proposal

PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

Learning outcome

- Acquire, analyse, and interpret research data and methods in a way suitable for presentation to the scientific community.

Assessment tasks

- Poster presentation
- Mini-paper submission

- Project proposal

PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

Learning outcome

- Acquire advanced theoretical and practical knowledge of fields of contemporary research.

Assessment tasks

- Research engagement
- Poster presentation
- Mini-paper submission
- Project proposal

PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

Learning outcome

- Gain insight into the day-to-day running of a research group and the responsibilities in research and collaborate in discussion centred around research ideas, methods, and data.

Assessment tasks

- Research engagement
- Poster presentation
- Mini-paper submission
- Project proposal

PG - Engaged and Responsible, Active and Ethical Citizens

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of

connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

Learning outcome

- Gain insight into the day-to-day running of a research group and the responsibilities in research and collaborate in discussion centred around research ideas, methods, and data.

Assessment tasks

- Research engagement
- Poster presentation