Department of Human Biology  
School of Biomedical Sciences  
Faculty of Health Sciences  
biomed.curtin.edu.au

Research Project 334  
Semester Two, 2012

Unit study package number: 6937 (v.6)  
Mode of study: Internal  
Tuition pattern summary:  
Lecture: 1 X 2 Hours Weekly  
Tutorial: 1 x 1 Hours Weekly  
Credit value: 25  
Pre-requisite Units:  
7671 v. 10 Anatomy 231  
7689 v. 9 Anatomy 232  
8472 v. 12 Physiology 231  
8846 v. 8 Physiology 232  
Must Satisfy: (1 AND 2 AND 3 AND 4)  
Core Unit Status:  
SIGNIFICANT: Fail this unit TWICE and it may lead to the termination of your course.  
Result type: Grade and Mark

Unit Co-ordinator:  
Name: Dr Marilyn BENNET-CHAMBERS  
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Building : Room (08) 9266 3358  
Consultation times: Any time door is open.

Supervisor(s):  
Name:  
Phone:  
Email:  
Building : Room

Administrative contact:  
Name: Mrs Janette McLeod  
Phone: (08) 9266 7374  
Email: J.McLeod@curtin.edu.au  
Building : Room Biomedical Sciences Building 308.122

Learning Management System: FLECS - Blackboard  (oasis.curtin.edu.au)
Syllabus

Human biology-based research with a focus on the philosophy of science, design and ethical conduct, critical literature review, data collection/analysis and written/verbal data presentation.

Introduction

Welcome to Research Project 334. For most of you this unit is one of the final units for your degree. It represents the culmination of university study as you will carry out your own research and present the findings in both oral and written form.

The unit content is designed to provide you with the background knowledge to perform your research design and analysis. The project topics vary widely and you will need to draw on the resources gained throughout your degree combined with current information sources to gain the specialist knowledge needed for your project. I hope you will find this unit both challenging and rewarding in terms of the time and effort you invest in it.

The key to success is careful planning of your time and keeping to the deadlines. Your project supervisor will help with the specifics of your project.

Aims

Employers, including but not restricted to research institutions, want graduates who can work in a team, make decisions, and retrieve and evaluate relevant information. As a University graduate you will also be expected to have good written and verbal communication abilities and effective interpersonal skills. This unit is designed to focus on planning, gathering and analysing data, drawing conclusions and communicating them. It will develop your skills in searching the literature, organizing data collection, using statistical packages and using presentation software.

Unit Learning Outcomes

Upon successful completion of this unit you will be able to:

1. Identify ethical issues involved in human and animal research and completion of application for ethics approval, where applicable.
2. Critical evaluation of current knowledge including a research proposal and literature review.
3. Develop adequate problem solving and time management skills to complete tasks safely within required timeframe.
4. Interpretation of data using statistical analysis, where applicable.
5. Presentation of scientific data within the context of current research using poster, oral presentation and manuscript formats.

Learning Activities

Research is an aspect of Science that often results in new knowledge. Science is a way of observing and understanding the world. Lectures will introduce you to how scientific observation can provide a framework to undertake research and answer your research question. Deciding on what is your research question is fundamental to your research. The 'experiments' you undertake provide a means of answering your question however you need to set the scene for your question and this is the literature review. The tutorials will provide you with the 'nuts & bolts' of how to write a literature review and then how to
Present your research in different formats; as a written scientific thesis, an oral presentation and finally as a poster.

The lectures will give guidelines that enable you to set the scene for your research question, when we examine what is meant by Science or a Scientific approach (aka rules) to viewing the world. Next is an examination of what ethical issues you may encounter and how these are regulated in any institution undertaking research, whether human, animal or involving genetic manipulation. Finally, there is a brief overview of the history of the philosophy underpinning Science, or how we came to look at the world today as scientists.

**Tutorial/Seminar Sessions**

These sessions give you the skills to set the scene for your research question. This is your literature review. Your research methodology (or experimental approach) is how you go about answering the question and this is decided in consultation with your supervisor. How to present a research proposal is where you learn to put this together in a recognised format. Once you have collected data you need to understand how to input data into a spreadsheet so that it can be successfully presented and analysed with various graphing and/or statistical packages. Understanding how to successfully use and interpret output from the JMP® statistical package will be covered in the Biostatistics tutorials. You will then need to understand how to discuss the answer to your question in the context of all the information published in your particular research area. This is covered in how to write a research paper. Finally, there is a tutorial on how to present your research in a poster format. Attendance at these sessions is compulsory as they give you the tools to complete your project assessments; literature review, proposal, poster, oral presentation and paper.

**Independent Research**

The minimum time allocation is 5 hours per week. Early in the semester there will be more set activities that involve writing a literature review and research proposal and a review of different types of data analysis that may be required. Most of the time later in the semester is allocated to independent research. You will need to spend about 10-12 hours a week in this unit to be successful.

**Learning Resources**

**Essential Texts**

You will need to purchase the following textbook in order to complete this unit:


**Recommended Texts**

You do not have to purchase the following textbooks but you may like to refer to them.


**Online Resources**
1. **FLECS-Blackboard** – This will provide an electronic copy of the unit outline, research guide, activities, due dates and relevant ethics formation. This will provide an electronic copy of the unit outline, research guide, activities, due dates and relevant ethics formation. This material will only be accessible to students enrolled in the unit. [http://lms.curtin.edu.au](http://lms.curtin.edu.au)

### Assessment Schedule

<table>
<thead>
<tr>
<th>Task</th>
<th>Value (%)</th>
<th>Date due</th>
<th>Unit Learning Outcome(s) assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature review &amp; research proposal</td>
<td>25%</td>
<td>20/8/2012</td>
<td>One, Two, Three</td>
</tr>
<tr>
<td>Literature review</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research proposal</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research presentation</td>
<td>60%</td>
<td>19/10/2012</td>
<td>Four, Five</td>
</tr>
<tr>
<td>Final oral presentation</td>
<td>10%</td>
<td>15/10/2012</td>
<td></td>
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<tr>
<td>Final paper submission</td>
<td>50%</td>
<td></td>
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<tr>
<td>Poster</td>
<td>5%</td>
<td>19/10/2012</td>
<td>Four, Five</td>
</tr>
<tr>
<td>Research conduct</td>
<td>10%</td>
<td>15/10/2012</td>
<td>Three</td>
</tr>
<tr>
<td>Lab book and organization</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initiative and creativity</td>
<td>5%</td>
<td></td>
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</table>

### Detailed information on assessment tasks

1. Literature Review and Research Proposal (25%)

   **Literature Review (15%)**
   The document should be no more than 5000 words and include a minimum of recent 10 research articles. This will form the framework of a substantial part of your final presentation and paper submission. The written manuscript is first submitted to your supervisor for feedback. An improved and extended version, after feedback from your supervisor(s), will be submitted to the Unit coordinator by **Monday August 20, 2012**.

   **Research Proposal (10%)**
   The written research proposal which includes the rationale, aim and significance of your project and experimental plan, together with the type of statistical analysis, if any, you anticipate doing will accompany your literature review and be marked by your supervisor and Unit Coordinator. This is to be submitted to the Unit coordinator by **Monday August 20, 2012**.

You need to submit TWO hardcopies and an electronic copy of both the literature review and the proposal.

2. Research Presentation (60%)

   **Written research report (50%)**
   Your written research report should be the culmination of your research and reflect the effort and work you have achieved during the semester. It should be set out as a thesis-style report including an: Abstract, Introduction, Materials and Methods, Results and Discussion section. I would strongly suggest that you submit a draft copy of your report to your supervisor in time to get feedback before you submit the final copy to the Unit Coordinator by **Monday 15th October, 2012**. Each report will be marked by; your
supervisor, a second examiner and the unit coordinator. The marking of the paper will be based on the quality of research planning and conduct, data collection and analysis as well as the report layout, editing and presentation. No marks will be allocated for a positive or negative result.

3. Research presentation (10%)
In this final activity you will present the outcome of your research to the Department’s staff and students at a TBA. This is usually a PowerPoint presentation and should include all the sections required in your written report. Your oral presentation will be marked by a panel of academics, present during the presentation in addition to the unit coordinator.

3. Poster (5%)
Students will prepare a poster for display at a poster session. It is expected that the content and structure of the posters will be compatible with those presented at national and international conferences. Specific direction will be given to students during the teaching weeks. Each poster should include: Title, authors and affiliation; Introduction, Aim(s), Significance, Methodology, Results and Discussion. Students will be expected to submit their posters for printing by Wednesday October 17th, 2012. These will be marked by a panel of academics, including the Unit Coordinator, and will culminate with a poster session from 3-5 pm on Friday, 19th October 2012. You will be expected to stand by your poster at this session, answer questions and support your peers. A fail in this component can result in a FAIL in the unit. The Department will choose the first and second best posters to be laminated in large format and displayed permanently on a designated notice board.

4. Research Conduct (10%)
   • Lab book and organization (5%)
   You will be required to purchase an exercise book/journal. It will be a diary of your weekly interactions with your supervisor as well as your record of research activity. At every session you should make notes of the different aspects discussed and will be invaluable at write-up time. Your laboratory book will be marked by the unit coordinator and must be handed in with the final research report. The submission date is Monday 15th October, 2012.

   • Initiative and creativity (5%)
   This unit is about carrying an independent research project, which requires your full dedication in terms of enthusiasm, usage of personal initiative and creativity as well as time investment. Your supervisor will assess these criteria as a result of your expected constant interaction with him/her.

Fair assessment through moderation
Moderation describes a quality assurance process to ensure that assessments are appropriate to the learning outcomes, and that student work is consistently evaluated by assessors. Minimum standards for the moderation of assessment are described in the Assessment Manual, available from policies.curtin.edu.au/policies/teachingandlearning.cfm

Late penalties
Faculty of Health Sciences policy for late submission of assessments is 10% per day, including weekends.

**Referencing style**
Students should use the **Chicago** or **APA** referencing style when preparing assignments. Consistency is important, however you can choose to leave the URL for the paper out of your reference list. More information can be found on this style from the Library web site: library.curtin.edu.au/research_and_information_skills/referencing

**Pass Requirements**
In order to complete this unit for full credit towards your degree, you must complete the assessments; the literature review, written research proposal, seminar presentation and submit your final research paper and the poster. For details on the allocation of marks refer to the first page of this outline.

**Supplementary information**

**Enrolment and HECS:**
It is your responsibility to ensure that your enrolment is correct - you can check your enrolment through the eStudent option on OASIS, where you can also print an Enrolment Advice.

**Supplementary/Deferred Exams:**
Supplementary and deferred examinations granted by the School of Biomedical Science will be held in the week beginning **19th November, 2012**. Notification to students will be made after the your Schools’ Board of Examiners meeting via the Official Communications Channel (OCC) in OASIS (on welcome page- see Figure 1).

![OCC](image)

**Figure 1 OCC**

It is the student’s responsibility to check their OASIS account for official Curtin correspondence on a weekly basis. If your results show that you have been awarded a supplementary or deferred exam you should immediately check your OASIS email for details. Please note the following:

1. **Your final results are NOT available until after your school’s Board of Examiners meeting. This is held in the SECOND week AFTER the examination period. You CANNOT obtain your marks by calling your tutor or the unit coordinator, but must wait until the examinations office in central administration releases them in the week following the board meeting. These are published on the Curtin University website. Please do not contact us asking for your marks.**

2. **SUPPLEMENTARY and DEFERRED examinations are awarded only at the discretion of the Board of Examiners. It is your responsibility to be available at this time should a supplementary/deferred exam be awarded. No other time will be arranged.**
Plagiarism

Plagiarism occurs when work, or property of another person, is presented as one’s own, without appropriate acknowledgement or referencing. Plagiarism is a serious offence. For more information refer to academicintegrity.curtin.edu.au

Plagiarism Monitoring

All written assessments, literature review & final research paper, will be monitored for plagiarism using Turnitin (see turnitin.com). Students who do not want assignments retained in the Turnitin database must lodge a special request prior to the submission date. For further advice see academicintegrity.curtin.edu.au/studentsturnitin.html

Student Rights and Responsibilities

It is the responsibility of every student to be aware of all relevant legislation, policies and procedures relating to their rights and responsibilities as a student. These include:

- the Student Charter,
- the University’s Guiding Ethical Principles,
- the University’s policy and statements on plagiarism and academic integrity,
- copyright principles and responsibilities,
- the University’s policies on appropriate use of software and computer facilities,
- students’ responsibility to check enrolment,
- deadlines, appeals, and grievance resolution,
- student feedback,
- other policies and procedures
- electronic communication with students

See students.curtin.edu.au/rights for comprehensive information on all of the above.
Your responsibilities

• Research conduct
This project is to be carried out individually. You may require help from your supervisor and lab technicians in order to set up experiments, properly use equipment and data collection. However, the analysis, writing and presentation of the research report are your sole responsibility.
Your research supervisor will help you plan your research. You should talk/email them regularly according to an agreed timetable. You should seek any support you need from technical staff well in advance. If your project requires contact with students or staff of the university or with the general public you must be behave in a professional manner and always receive informed consent from all subjects for their involvement.

• Ethical Issues
As a biomedical researcher you MUST adhere to ethical regulation in aspects of direct research on human and animals, usage and manipulation of human and animal tissues and handling of human identifiable information and data in a confidential manner. Be aware that you have to check whether or not you need to clear your ethics requirement before you start your research. If you do you will be expected to prepare and lodge an ethics application to the right committee on the due date. Please discuss this matter with your supervisor and the unit coordinator.

• Intellectual property
All teaching and research materials, resources and outcome are the property of Curtin University. Students are responsible for keeping all the above in a proper way with a self-explanatory record in your lab book. At the end of your work you MUST hand these materials to your supervisor and/or the unit coordinator.
Lectures & tutorial sessions will be run on **Thursdays from 9am-12pm in 405.226.**
Research will be done in consultation with your supervisor and include all parts of the project contributing to the assessment tasks up to a **minimum** of 5 hours per week.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture</th>
<th>Tutorial/Seminar</th>
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<tbody>
<tr>
<td></td>
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<td>Discussion with Supervisor</td>
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<td><strong>Endnote course</strong></td>
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<td>'O'</td>
<td>July 9-13</td>
<td><strong>What is Science?</strong></td>
<td><strong>Laboratory safety induction</strong></td>
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<td><em>MBC</em></td>
<td><em>David Townsend</em></td>
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<tr>
<td>1</td>
<td>July 16</td>
<td><strong>How to write a literature review</strong></td>
<td><strong>How to write a research proposal</strong></td>
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<td></td>
<td><em>MBC</em></td>
<td><em>Keith Gregg</em></td>
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<td>2</td>
<td>July 23</td>
<td><strong>Ethics in Science</strong></td>
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<td><em>MBC</em></td>
<td><strong>Research</strong></td>
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<td>3</td>
<td>Jul 30</td>
<td><strong>Review of RP &amp; LR outlines</strong></td>
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<td><em>MBC</em></td>
<td><strong>Research</strong></td>
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<td>4</td>
<td>Aug 6</td>
<td><strong>How to write a research paper and create a poster.</strong></td>
<td><strong>Research</strong></td>
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<td></td>
<td><em>Melissa Corbett (10am start)</em></td>
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<tr>
<td>5</td>
<td>Aug 13</td>
<td><strong>How to write a research paper and create a poster.</strong></td>
<td><strong>Research</strong></td>
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<td></td>
<td></td>
<td><em>Melissa Corbett (10am start)</em></td>
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<tr>
<td>6</td>
<td>Aug 20</td>
<td><strong>Tuition free week</strong></td>
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<tr>
<td>7</td>
<td>Aug 27</td>
<td><strong>Data collection and presentation</strong></td>
<td><strong>Friday Poster Display Session 3-5pm</strong></td>
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<tr>
<td>8</td>
<td>Sept 3</td>
<td><strong>Research</strong></td>
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<tr>
<td>9</td>
<td>Sept 10</td>
<td><strong>Research</strong></td>
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<td>10</td>
<td>Sept 17</td>
<td><strong>Research</strong></td>
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<tr>
<td>11</td>
<td>Sept 24</td>
<td><strong>Research</strong></td>
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<tr>
<td>12</td>
<td>Oct 1</td>
<td><strong>Data Analysis Consult &amp; Research</strong></td>
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<tr>
<td>13</td>
<td>Oct 8</td>
<td><strong>Data Analysis Consult &amp; Research</strong></td>
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<tr>
<td>14</td>
<td>Oct 15</td>
<td><strong>Final oral research presentation</strong></td>
<td><strong>Friday Poster Display Session 3-5pm</strong></td>
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</table>

1 Please note that on the ‘Research’ Thursday’s George Newland will be available for statistical consultancy and MB-C is available for any research/statistics advice/help.

3 During these 2 weeks you need to book at least ONE 2-hour statistical consult with either George Newland (Multivariate Analysis) or MB-C (Multiple Regression)