FACULTY OF VETERINARY SCIENCE

BACHELOR OF VETERINARY SCIENCE HONOURS ELECTIVE

VETS 5400

Unit of Study Handbook
2011
Draft

Unit of Study Co-ordinator

John Baguley

THIS HANDBOOK BELONGS TO _______________________________________
Unit of Study Description

Unit Name: HONOURS ELECTIVE
Code: VETS5400
Credit Points: 12
Coordinator: John Baguley

Assumed knowledge:

Prohibition:

Offered: Rotations 1-10, Year 5

Classes:

Assessment: Dissertation, reflective statement, oral presentation, supervisor report and standard elective rotation requirements

This unit of study provides students who have attained a suitable WAM based upon academic achievements in years 2-4 with the opportunity to develop greater proficiency in research within a veterinary related discipline. Eligible students may enrol in the honours unit of study instead of the two standard elective rotations offered in final year.

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1 General Information

1.1 Timetable

Honours in the Bachelor of Veterinary Science degree is achieved through successful completion of a research project during final year (Veterinary Student Internship Program). Students enrol in the Honours Elective unit of study (VETS5400) rather than Elective 1 and Elective 2 units of study (VETS5360 and VETS5361). For most honours students, standard elective unit of study placements will still be completed during the year to ensure adequate experience in veterinary clinical work. The assessment load for these standard placements is reduced to provide time for completing honours requirements. The honours assessment requirements must be submitted by the end of rotation 10.

Students who believe they may be eligible for honours must submit an Honours Application Form in the format provided in the appendix section of this Handbook by email to the Unit of Study Coordinator. The Application Form must be submitted by the end of the first week after the inter-semester break in Year 4.

1.2 Staff Details

All proposed honours projects need to be approved by the Honours Committee prior to commencement. The Honours Committee consists of the Unit of Study Coordinator for Honours Elective (Honours Coordinator) and academic members of Faculty involved in final year, honours or each of the honours research streams (see below). All honours projects require a Supervisor to be nominated and approved by the Honours Committee.

<table>
<thead>
<tr>
<th>Name</th>
<th>Details</th>
<th>Research Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Baguley</td>
<td>Unit of Study Coordinator and Professional Practice Coordinator</td>
<td>Veterinary practice management</td>
</tr>
<tr>
<td></td>
<td>Location Gatekeepers Lodge [B03]</td>
<td>Veterinary education</td>
</tr>
<tr>
<td></td>
<td>Telephone (02) 9036 9479</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Facsimile (02) 9351 4261</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Email <a href="mailto:john.baguley@sydney.edu.au">john.baguley@sydney.edu.au</a></td>
<td></td>
</tr>
</tbody>
</table>

1 Students collecting prospective data and requiring development of technical expertise may organise an honours placement with their supervisor. This placement will need to be approved by the Honours Committee.
1.3 **Learning Aims**

The goal of this unit of study is to reward outstanding academic achievement during years 1-4 of the curriculum through providing the opportunity to participate in a research based honours program. Overall, eligible students will gain valuable experience in research and preparation for a research based career as well as the opportunity to grow professionally through this demanding program. The award of honours at graduation is very helpful for graduates considering a future career in research; it is strongly recommended for those students contemplating a higher degree due to competition for scholarships in this field. High quality projects should lead to a publishable paper which again will greatly assist those wishing to pursue future research.

Honours research may be conducted in three broad streams:

1. Laboratory research
2. Clinical research
3. Independent learning project

The Laboratory research stream will focus upon developing laboratory skills and an understanding of relevant and topical methodologies. Students interested in this area of study should contact academic staff in a relevant discipline to discuss available opportunities or the Honours Coordinator. The Cornell Leadership Program is an alternative pathway for students completing this stream with eligible students utilising the framework of this experience to complete the requirements for honours.

Clinical research will particularly focus upon developing an appreciation of the investigative process with respect to understanding of the cause, development, diagnosis, treatment, management and prevention of clinical disease. Again, students interested in this area of research should approach the Honours Coordinator or appropriate Faculty academic staff to discuss potential opportunities in this area.

The Honours Elective Independent Learning Project stream enables students to pursue a variety of research topics aligned with Faculty expertise in areas or using methodologies not readily defined as either laboratory or clinical research. Examples include industry, education and practice management research. Students interested in pursuing research in these areas should contact the Honours Coordinator or relevant Faculty academic staff to discuss their interests.
The availability of staff and other resources will influence the number of opportunities for each of these streams during the year and you should carefully consider this when planning your honours project. The draft research proposal should include the name of two potential supervisors for your project and you should discuss your proposal with at least one of these people prior to submission.

1.4 Learning Outcomes

Learning outcomes for this unit of study are linked to veterinary graduate attributes and specific research graduate attributes as defined in the Research Supervisor Report Form. The broad learning outcomes are:

1. Application of appropriate research methods including primary and or secondary data collection and analysis
2. Deliver and defend research outcomes (both written and oral)
3. Develop an appreciation of student and research supervisor interactions and management
4. Develop an appreciation of the research process, the management of research projects, research culture and an insight into research as a potential career direction
5. Demonstrate an extended commitment to learning and research
6. Demonstrate a commitment and an ability to conduct research in an ethical manner

More specific learning outcomes will be dependent upon the honours research area and methodology. Overall, research projects require both primary (typically data you collect or unpublished) and secondary data (published sources) collection. The scope of your project should be clearly defined in discussions with your supervisor and detailed in your research proposal. The scope of projects can be identified by examining the stages of the research process (see Table 1.0 Stages of the Research Process) and determining the number of stages that may be completed given time and resource limitations, required depth of analysis and the research questions or hypotheses being addressed.

As a minimum, the research project will typically involve 3 of these stages and in addition all projects will require stage 1 and 11 to be completed. It is possible for one student to start a project by completing stages 2-4 and for a second student to then finalise that project and complete stages 5-10. Both students would provide stages 1 and 11 relevant to their research.
Table 1.0 Stages of the research process

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Define the research topic&lt;br&gt;Identify an area of research need and the potential value of this research</td>
</tr>
<tr>
<td>2</td>
<td>Conduct a literature review&lt;br&gt;A critical discussion and analysis of what you understand is currently known and unknown about the topic, leading to identification of the research gap.</td>
</tr>
<tr>
<td>3</td>
<td>Propose recommendations for future research&lt;br&gt;Focusing upon your specific research question or topic</td>
</tr>
<tr>
<td>4</td>
<td>Prepare a detailed study design for the research topic&lt;br&gt;Including limitations, likely biases and how these biases should be minimised</td>
</tr>
<tr>
<td>5</td>
<td>Develop tools or materials and methods for data collection&lt;br&gt;Data collection instruments such as a questionnaire or focus group plan&lt;br&gt;Discussion on the repeatability, validity and limitations of these tools</td>
</tr>
<tr>
<td>6</td>
<td>Develop a database for data storage&lt;br&gt;Discussion on how the data will be analysed and any potential problems</td>
</tr>
<tr>
<td>7</td>
<td>Data collection</td>
</tr>
<tr>
<td>8</td>
<td>Manage and analyse data&lt;br&gt;Statistical techniques and programs</td>
</tr>
<tr>
<td>9</td>
<td>Present and interpret results</td>
</tr>
<tr>
<td>10</td>
<td>Discuss results&lt;br&gt;Compare with other findings in the literature&lt;br&gt;Discuss any limitations with respect to study design</td>
</tr>
<tr>
<td>11</td>
<td>Conclusions and recommendations</td>
</tr>
<tr>
<td>12</td>
<td>Propose suitable methods for extension of study results and conclusions to stakeholders</td>
</tr>
</tbody>
</table>

Source: Adapted from Veterinary Public Health Management Program Research Project Guidelines (VETS7018 and VETS7019)

The Honours Committee will review all research proposals and provide advice to students and supervisors as part of the approval process. In summary, you are encouraged wherever possible to consider completing projects that require both secondary and primary data collection and analysis however, you should be mindful of the word limit (5,000 words\(^2 \)) available resources, 

\(^2\) The word limit may be increased or decreased if agreed by supervisors providing this is aligned with submission requirements for the intended journal.
time limitations and other commitments during final year rotations. The design of your honours project should be negotiated with your supervisor to ensure you are able to address the primary research question given these limitations.

Finally, your project and the associated dissertation should be based upon an attempt to fulfil the requirements for an article to be published in a relevant journal (see Summative Assessment, Dissertation). Reviewing articles from the target journal will provide a more specific guide to assist you in defining the depth and breadth, structure and style of your dissertation and therefore research project. Alternatively, you may wish to target publication in the University’s undergraduate research journal ORBIT (template for authors available through eLearning).

1.5 **Ethics**

The ability to conduct research with an appreciation for ethics is a key learning outcome for all honours research elective projects. You should discuss ethical approval for your research with your supervisor as early as possible prior to conducting your research.

All honours research involving the administration of questionnaires, surveys or interviews to humans requires Human Ethics Committee approval. Please see the University’s Human Ethics Committee website for further details.

Similarly, all research involving animals requires ethical approval by the Animal Ethics Committee and more information regarding animal ethics is available from the University’s Animal Ethics Committee.

If your project does not successfully obtain the required ethics approval before it commences you will be unable to complete the research component of your honours project. Therefore it is ESSENTIAL that you contact your potential supervisor, discuss your project and complete your research proposal by the due date or earlier due to time constraints associated with the ethics approval process.

1.6 **Research topics and supervisors**

Students should seek research areas and elective placements which are suited to their interests and which may assist their current career development aims. The nature of laboratory research
and clinical research create restrictions on the number of projects in these areas available at specific times of the year. Each Faculty supervisor is only required to supervise or co-supervise two honours students per year but may choose to be involved in more projects depending upon other commitments.

For assistance in this process, the Honours Coordinator will be able to guide you towards appropriate supervisors within the Faculty. In summary, in planning your research topic you should:

1. Determine an area of interest
2. Approach Faculty academic staff as potential supervisors
3. Develop a draft research proposal
4. Submit your draft research proposal after discussion with your potential supervisors

**Table 2.0 Honours streams summary**

<table>
<thead>
<tr>
<th>Honours Stream</th>
<th>Potential Areas of Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Research</td>
<td>Mostly pre-clinical disciplines and may include bench top research</td>
</tr>
<tr>
<td>Clinical Research</td>
<td>Clinical areas linked to species and likely case study based research</td>
</tr>
<tr>
<td>Independent Learning</td>
<td>An open category to accommodate variable career interest areas and research methods</td>
</tr>
<tr>
<td>Project</td>
<td></td>
</tr>
</tbody>
</table>

Honours research supervisors in final year will:

- Assist you in defining your research topic and the scope of your research
- Meet with you to assist planning and management of your research
- Assist you with the development of technical skills if required
- Provide a progress report at the mid-point of your research project (approximately rotation 6) and a Research Supervisor Report Form at the completion of your research project
- Collaborate with you in the research process
- Act as an examiner for your dissertation, reflective statement and oral presentation
1.7 **Graduate Attributes**

A complete list of the Graduate Attributes for the Faculty of Veterinary Science is provided in the appendix section of this Handbook. Satisfactory completion of honours elective units of study specifically contributes to the attainment of the following graduate attributes:

1. Research and Inquiry  E., F., G., H.
2. Information Literacy  A., B., C.
3. Personal and Intellectual Autonomy  B., E., F.
4. Ethical, Social and Professional Understanding  A.
5. Communication  A., C., D., E., F.

In addition, completion of these units of study will contribute to the attainment of more specific research based graduate attributes as defined by the Research Supervisor Report Form.

1.8 **Textbooks and Reference List**

There are no prescribed texts for these units of study although you will find the following texts and internet resources valuable during the semester.

**Useful Texts**


**Useful Links**


Statistics at Square 1:  [http://bmj.com/stasbk](http://bmj.com/stasbk)

Statistical online:  [http://www.statistics.com/content/about.html](http://www.statistics.com/content/about.html)

Statistics Glossary:  [http://www.stats.gla.ac.uk/steps/glossary/index.html](http://www.stats.gla.ac.uk/steps/glossary/index.html)
1.9  Learning Resources

1.9.1  University Library Services

While you are studying at the University of Sydney you have free access to the largest academic library in the Southern Hemisphere. Badham and Camden Libraries are the specialist libraries for veterinary science and Orange Library may also have resources of interest to you. The Library is happy to transfer items between campuses for you. Resources available include books, journals, videos, research databases, information skills training and access to qualified information specialists. As an honours student you are also eligible for additional assistance during final year.

Many of the resources on your reading lists will be available in the Reserve Collection at Badham or Camden. You will find that many of the journal articles and book chapters are available in electronic format. This allows you to access the material anywhere on campus and from locations off campus. Access to databases and some ejournals is also available off campus and more information is provided in the link below:


Library Staff Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karen Black</td>
<td>Faculty Liaison Librarian, Camden Campus</td>
</tr>
<tr>
<td></td>
<td>Farms Library, C15</td>
</tr>
<tr>
<td></td>
<td>Telephone (02) 9351 1627</td>
</tr>
<tr>
<td></td>
<td>Facsimile (02) 4655 6719</td>
</tr>
<tr>
<td></td>
<td>Email <a href="mailto:karen.black@sydney.edu.au">karen.black@sydney.edu.au</a></td>
</tr>
</tbody>
</table>

1.9.2  VIP

The Veterinary Information Portal (VIP) is an online resource where you will find a variety of links and subject pages as well as helpful library information. Your content is organised into units of study to enable you to find relevant material easily, and you can even add your own links and readings.
1.9.3  eLearning

This Unit of Study has some elements available online through USYD eLearning. Guides for logging in to Sydney eLearning are available from the following links:

- Logging in to Sydney eLearning (formerly WebCT)
- The eLearning environment (My eLearning sites)

If you are having trouble logging in or are faced with more complicated USYD eLearning related problems contact the ICT Help Desk at http://www.usyd.edu.au/ict/switch/ or by phoning 9351 6000. If you are having trouble getting through to your online learning site from home you may need to contact your own Internet Service Provider or the ICT Help Desk.

1.9.4  University Learning Centre

The Learning Centre has free workshops on essay writing, critical reading, oral presentation skills and time management develop essential learning skills.

Phone: (02) 9351 3853  
Email: lc@stuserv.usyd.edu.au

1.9.5  The Write Site

Assistance with writing your assignments with respect to grammar as well as sourcing and structuring your argument is also available through The Write Site:

- http://writesite.elearn.usyd.edu.au

The exercises on this site are highly recommended for all students.
1.10 Assessment

Assessment is based upon achievement of the learning outcomes for these units of study and is both summative and formative.

Successful completion of the honours units of study may lead to the award of Honours First Class or Honours Second Class at graduation:

1. Honours Class I and University Medal may be awarded from honours WAMs of 80 or greater
2. Honours Class I will be awarded from honours WAMs of 75 or greater
3. Honours Class II will be awarded from honours WAMs of 70 to less than 75

Each student will receive an Undergraduate WAM (based upon year 2-5 results) and an Honours WAM. The latter will be calculated from an equal weighting of the Undergraduate WAM and the Normalised Honours Mark (Honours Elective Unit of Study result). A normalization formula will be applied to the marks generated from all three streams (clinical, laboratory and independent learning project) to standardize the degree of difficulty in obtaining Honours between the streams. The Year 2-4 WAM will benchmark the normalisation formula. No student is to be advantaged or disadvantaged by selecting any particular Honours stream.

Students who receive an Honours WAM equal to or greater than 50 and less than 70 will not graduate with honours. Students who fail the honours unit of study will be required to complete two standard elective rotations and will no longer be eligible to graduate with honours.

1.10.1 Summative assessment

Honours students are required to satisfactorily complete standard elective rotation forms and assessments as required except the written assignment. Requirements, forms and assignments are detailed in the Handbook for Extramural Rotations and these should be submitted via the VVC as per other extramural placements. In addition, summative assessment for the Honours Elective requires the completion of a dissertation, reflective statement (both submitted via ELearning) and oral presentation.
Table 3.0 Summative assessment summary

<table>
<thead>
<tr>
<th>Learning Outcome</th>
<th>Assessment Task</th>
<th>Weight</th>
<th>Grade</th>
<th>Maximum submission date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. E., F., G., H.</td>
<td>Dissertation</td>
<td>100%</td>
<td>Normalised mark out of 100</td>
<td>End of rotation 10</td>
</tr>
<tr>
<td>2. A., B.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. A., C., D., E.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. G</td>
<td>Reflective statement</td>
<td>n/a</td>
<td>Satisfactory/Unsatisfactory</td>
<td>End of rotation 10</td>
</tr>
<tr>
<td>3. A., E., F.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. A., E.</td>
<td>Oral presentation</td>
<td>n/a</td>
<td>Satisfactory/Unsatisfactory</td>
<td>End rotation 12 plus 14 days</td>
</tr>
</tbody>
</table>

**Dissertation**

The dissertation should be 5,000 words (see previous comments) not including the bibliography and, unless specified by your supervisor, in the form of a manuscript suitable for publication in an established journal appropriate to the target audience of this research (please see target journal websites for advice regarding formatting). This word limit may be extended if it complies with the requirements of the target journal and agreed by your supervisors. The dissertation must be submitted via eLearning by the end of rotation 10. It will be marked by your supervisor and co-supervisor and a mark must be provided by the end of rotation 12 plus 14 days. The final mark will be normalised as discussed above.

**Oral Presentation**

Students are required to provide an oral defence of their dissertation (or suitable component of this project) during one of their intramural rotations or at an alternative, negotiated time as agreed by their supervisor and co-supervisor. Generally, large animal based projects will be presented during UVTHC rotations and small animal based projects will be presented during UVTHS rotations. The timing of the oral defence should be negotiated between the student, supervisor, co-supervisor, relevant intramural unit of study coordinators or honours unit of study coordinator. It is expected that the defence will require approximately 30 minutes consisting of a 15-20 minute presentation and 10-15 minutes of question time.
The format of the presentation should typically cover background to the research, methods, results and discussion with varying levels of information for each section dependent upon project progress. Students should seek further advice from their supervisors regarding any preferences with respect to formatting.

**Reflective Statement**

A reflective statement of 500 words (+/- 5%) based upon your research experience during these honours elective rotations must be submitted via eLearning at the same time as the dissertation.

### 1.10.2 Formative assessment

A guide to writing the research proposal and copies of the Honours Application, Progress Report and Research Supervisor Report Forms are provided in the appendix section of this Handbook.

**Table 4.0 Formative assessment summary**

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Maximum due date</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draft Research Proposal&lt;sup&gt;3&lt;/sup&gt;</td>
<td>End intra-semester break, second semester Year 4</td>
<td>Draft Research Proposal</td>
</tr>
<tr>
<td>Initial meeting with supervisor</td>
<td>Completed prior to the end of rotation 3, Year 5&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Honours Application Form</td>
</tr>
<tr>
<td>Mid point meeting with supervisor</td>
<td>Completed prior to the end of rotation 6, Year 5</td>
<td>Final Research Proposal</td>
</tr>
</tbody>
</table>
| Final meeting with supervisor  | Completed by the end of rotation 12 plus 14 days, Year 5 | Research Supervisor Report Form

<sup>3</sup> For those students who gain entry into the Cornell Leadership Program after submission of this proposal, the draft will no longer apply and a finalized research proposal is not required.

<sup>4</sup> This is a recommendation and may not be possible due to the constraints of the Y5 program however at the start of Y5 the student and supervisors should have agreed upon the aims of the research and subsequent meeting times.
1.11 **Occupational Health and Safety**

The University of Sydney policies related to Occupational Health and Safety are located at [http://www.usyd.edu.au/ohs/policies/ohs/index.shtml](http://www.usyd.edu.au/ohs/policies/ohs/index.shtml) and you should check through these policies and guidelines for relevant advice, particularly in relation to reporting incidents and accidents. As this unit of study may include visits to extramural sites or laboratory work, you should familiarise yourself with:

- Fieldwork Safety Guidelines
- Clinical Fieldwork – Health and Safety Guidelines
- Laboratory Safety
- Incident and Accident Reporting and Investigation

Whilst some of these policies are orientated to human health professionals, you should be familiar with general principles.

Please note that there may be other policies that you should refer to depending upon the type of project you are completing and you should discuss possible issues relating to Occupational Health and Safety with your supervisor.

**Occupational Health and Safety Protocols**

There are inherent risks in working with animals and with medicines, and every effort must be made to minimise these. It is your duty to take reasonable care, not just for yourself, but also for staff, other students, and anyone else likely to be affected by your actions. The following guidelines have been adapted from the Student Handbook for Clinical Extramural Study 2002, Faculty of Veterinary Science, University of Liverpool.

- When handling animals, always adopt the appropriate methods of approach and restraint.
- Handle animals only when you have the permission of the individual responsible for them, except in cases of emergency when no senior person is available.
- Undertake procedures with animals, equipment, drugs or chemicals only when you have permission or instruction, and understand what you are doing.
- Wear clean protective clothing appropriate to the practice/establishment and to the procedure being undertaken.
• Remove protective clothing as soon as the work is completed. Soiled protective clothing must not be worn in areas where others could be contaminated.

• Exercise good personal hygiene at all times. Wash (or shower) when operations are complete. Avoid smoking, or consuming food or drink, while working with animals.

• Wear appropriate protective equipment when working in a dusty environment, such as a poultry house. Take reasonable precautions or avoid such environments if you suffer from asthma.

• Treat, or have treated, any cuts or abrasions, and ensure that these are properly covered before commencing work with animals.

• Ensure that you are adequately vaccinated (e.g. tetanus, Q fever).

• In the event of being bitten or scratched, thoroughly clean the wound with hot, soapy water, then seek medical advice as appropriate.

• Report promptly to your supervisor any accident or injury; details may need to be entered in an Accident Book.

• Report all accidents and injuries to the Faculty Office by completing the ‘Occupational Injury, Illness or Incident Report’ form found in this book. The ‘Occupational Injury, Illness or Incident Report’ form is to be faxed to the Faculty Office on fax: (02) 9351 3056

In addition, the process of handling animals, carrying out a necropsy on animal carcases, or collecting secretions and samples may lead to exposure to allergens, parasites, bacteria and viruses. Some of the associated infections may be transmissible to humans (zoonoses) especially Salmonellosis, Leptospirosis and Anthrax.

• Examine animals for signs of disease, which may be transmissible to humans, e.g. ringworm, scabby mouth and diarrhoea.

• Although all faeces are potentially hazardous, special precautions must be taken when handling animals with diarrhoea because of the risk of infection by Salmonella, Campylobacter and Cryptosporidium.

• Wear adequate protective clothing when handling calves with ringworm or sheep with scabby mouth, and report any signs of skin irritation or inflammation immediately.

• Dispose of animal carcases and spent equipment in the approved manner.
• Women who may be pregnant, or those who suspect they are, must not work with lambing ewes or handle aborted foetuses, because of the risk of Chlamydia, Toxoplasma and other infections.

• If you need to consult a doctor, make him/her aware of any recent exposure to animals and/or animal material.

Radiation

Under NSW legislation, student interns are not automatically able to operate radiation apparatus on the basis of their enrolment in this course. Extramural Supervisors however may apply for an exemption under the legislation to enable you to take x-rays. If you are involved in clinical or other research that involves taking radiographs, please check that your supervisor has such an exemption before commencing your project.

Under Year 5 Policy you are required to wear your radiation personal monitoring device at all times during relevant rotations and comply with requests from the monitoring agency each quarter.

Occupational Health and Safety Disclosure Policy

The aim of this policy is to ensure that students are able to safely achieve educational outcomes during the completion of course requirements. The Faculty is committed to Equal Opportunity in Education and accommodating students with disabilities.

The University and our extramural partners have legal responsibilities to ensure the health, safety and welfare of students who are under our direction and supervision. We therefore require proper disclosure of relevant information by students in order to fulfil this duty. The expectation is that our students will cooperate and abide by University protocols established for their benefit. Non-disclosure of relevant information by a student may jeopardise insurance cover in the event of a related accident.

Students are required to notify the Year Coordinator in writing as soon as practicable of the implications of any illness, disability or circumstances that may impact upon their capacity to safely fulfil inherent tasks or physical or cognitive demands found typically during the completion of units of study or which may impact upon the safety of others during completion of units of study. Examples may include injury, chronic illness, medication and pregnancy. If
not sure, the student should seek advice from either the Sub Dean for Students or Student Services to discuss matters in confidence.

For further details please view the Faculty’s Occupational Health and Safety Disclosure Policy provided in the Faculty Handbook or via the Faculty homepage.

**1.12 Faculty and University Policies and Guidelines**

The University of Sydney policies outline the roles and responsibilities of the University to its students themselves. Administrative requirements can be found in the Veterinary Faculty Handbook and other relevant requirements can be accessed via Policy Online.

Policies relevant to veterinary students can be found in this Guide and the Extramural Rotations Guide as well as on the Veterinary Faculty home page at:

http://sydney.edu.au/vetscience/

Please note that you will also be bound by other specific legal requirements in conducting and recording the results of your research and you should consult your supervisor regarding your specific duties.
## 2.1 Marking Criteria for Dissertation

<table>
<thead>
<tr>
<th>GRADE</th>
<th>Introduction/ Literature Review</th>
<th>Research Method</th>
<th>Results</th>
<th>Discussion/Theoretical Analysis</th>
<th>Presentation</th>
</tr>
</thead>
</table>
| **High Distinction** (minor emendations or publishable quality) | Comprehensive  
- Shows a high level of thought, knowledge and reflection  
- Student is able to relate material to other knowledge domains  
- Review critiques literature well, incorporating many sources to develop an argument with little to no summarising of previous work  
- May resolve theoretical and/or empirical problems and show evidence of creative or innovative conceptualisation  
- Discussion is integrated into a logical, coherent whole: ‘tells a story’ and leads logically into research proposed | Design correct and unambiguously addresses research aims  
- Choice of methods shows scope, standardisation, clarity and validity  
- Awareness of methodological biases  
- Choice of materials and subject selection are appropriate and are properly justified within the viable scope of the study  
- Explanations of procedure and analysis are detailed, clear, complete & ethical (could be repeated by an independent investigator)  
- Flows logically from issues raised in Introduction/ Literature Review  
- Setting-out follows acceptable conventions | Presentation is succinct  
- Tables, graphs and figures have been efficiently used and there is no repetition  
- All relevant information is presented with a result for every method and a method for every result  
- All relevant analyses are clearly presented in correct statistical format showing a clear understanding of choice of analyses  
- Results follow a reasoned sequence in the order that the methods were presented. | High level of thought and reflection is displayed and the outcome of research aims/questions is clearly explained and reasoned  
- Reconceptualisation of ideas occurs  
- A comprehensive understanding of issues is demonstrated  
- Information is generalised beyond the immediate context (if possible)  
- It creatively combines new with old concepts, based on evidence  
- Implications of research are discussed clearly, transparently, widely and plausibly offering suggestion for future research and practice  
- Uses limitations of existing knowledge to suggest new possibilities  
- It locates inquiry in a larger context  
- Comprehensively discusses biases and limitations of all aspects of the study | Presentation is orderly, clear and aids understanding in all sections of the report  
- Where appropriate, sections and sub-sections are used and are logically ordered  
- Expression is clear  
- Complex arguments are structured in an orderly way  
- Appropriately referenced |
| **Distinction** (moderate emendations for publication) | Reasonably comprehensive:  
- Evidence of thought and reflection  
- Some attempt to relate material to other knowledge domains  
- Some faults with critical appraisal with tendency to summarise literature rather than develop a logical argument  
- Review identifies and attempts to resolve theoretical puzzles  
- Essential content within the domain is successfully integrated | Criteria are those for HD except that  
- Individual sections are excellent, but the sense of clarity and logical continuity is uncertain  
- OR a section is abbreviated or incomplete  
- OR a significant but solvable (non-fatal) problem exists in design  
- OR the plans are technically perfect, but lack scope or do not acknowledge all possible biases | Criteria are those for HD except that  
- The results are unnecessarily repetitive  
- OR expression and format of results is occasionally unclear  
- OR one or two tables or diagrams are incorrectly done  
- OR research aims/questions are not fully answered by the results  
- OR a minor flaw exists in an otherwise insightful interpretation  
- OR some results are abbreviated, incomplete or omitted | It explores all necessary content with research aims/questions thoroughly answered and reasoned  
- It argues well and clearly within issues but does not make higher-level abstractions  
- Minor omissions/errors flaw otherwise compelling argument  
- Sense of mastery of issues is uncertain  
- Discusses most biases and limitations of study | Criteria are those for HD except that  
- A notable number of trivial errors occur  
- OR some inappropriate conventions are followed  
- OR one section is flawed |
| **High  Distinction (minor emendations or publishable quality)** | Criteria are those for HD except that  
- Evidence of thought and reflection  
- Some attempt to relate material to other knowledge domains  
- Some faults with critical appraisal with tendency to summarise literature rather than develop a logical argument  
- Review identifies and attempts to resolve theoretical puzzles  
- Essential content within the domain is successfully integrated | | | |
| **Distinction** (moderate emendations for publication) | Criteria are those for HD except that  
- Individual sections are excellent, but the sense of clarity and logical continuity is uncertain  
- OR a section is abbreviated or incomplete  
- OR a significant but solvable (non-fatal) problem exists in design  
- OR the plans are technically perfect, but lack scope or do not acknowledge all possible biases | Criteria are those for HD except that  
- The results are unnecessarily repetitive  
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- OR some results are abbreviated, incomplete or omitted | Criteria are those for HD except that  
- A notable number of trivial errors occur  
- OR some inappropriate conventions are followed  
- OR one section is flawed | | |
<table>
<thead>
<tr>
<th>Criteria (significant recommendations for development)</th>
<th>Review identifies and defines major issues</th>
<th>Criteria are those for D except that</th>
<th>Criteria are those for D except that</th>
<th>Individual issues/outcomes are argued clearly and thoroughly BUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Clear and strong arguments are developed within some major issues</td>
<td>▪ Several sections lack detail</td>
<td>▪ The results lack some key details</td>
<td>▪ Integrative abstraction is absent</td>
<td></td>
</tr>
<tr>
<td>▪ Greater tendency to summarise literature rather than develop an integrative and logical argument</td>
<td>▪ OR moderate but solvable flaws exist in the research plan</td>
<td>▪ OR the results are repetitive and format of statistics is often incorrect</td>
<td>▪ There may be several minor flaws in argument, which often is purposeless</td>
<td></td>
</tr>
<tr>
<td>▪ Technical issues treated competently</td>
<td>▪ OR one research aim is not well met</td>
<td>▪ OR little to no results are presented for some lesser aims/questions</td>
<td>▪ Few biases and limitations of study discussed</td>
<td></td>
</tr>
<tr>
<td>▪ Review identifies some major issues</td>
<td>▪ OR setting out is somewhat flawed</td>
<td>▪ OR one or two non-fatal errors occur</td>
<td>▪ A sense of the larger context is missing</td>
<td></td>
</tr>
<tr>
<td>▪ Comments are essentially descriptive</td>
<td>▪ Technical issues treated competently</td>
<td>▪ OR the report is confused in places</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Minimal critical analysis is attempted</td>
<td>▪ All/most sections lack some details</td>
<td>▪ Arguments are correct/mostly correct but are rather limited in scope</td>
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</tr>
<tr>
<td>▪ OR analysis lacks depth</td>
<td>▪ OR several significant but solvable flaws exist in the research plan</td>
<td>▪ OR there is little evidence of integration</td>
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</tr>
<tr>
<td>▪ OR analysis is somewhat confused</td>
<td>▪ OR methods address only some of the research aims</td>
<td>▪ OR the effects of limitations of existing evidence/knowledge tend to be missed</td>
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</tr>
<tr>
<td>▪ Main focus is on concrete issues</td>
<td>▪ OR setting-out lacks logical continuity and clarity though most major issues are covered</td>
<td>▪ OR some conclusions are missed AND</td>
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<tr>
<td>▪ Lack of integrating argument</td>
<td>▪ OR little awareness of biases inherent with methods implemented</td>
<td>▪ Some minor errors in logic occur</td>
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<tr>
<td>▪ Some technical expertise revealed</td>
<td>▪ OR some minor errors in logic occur</td>
<td>▪ OR some key issues are ignored</td>
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<tr>
<td>▪ May have non-major factual errors</td>
<td>▪ OR few to no biases and limitations of study discussed</td>
<td>▪ OR few to no biases and limitations of study discussed</td>
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<tr>
<td>▪ May contain serious errors of fact</td>
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<tr>
<th>Credit (satisfactory work requires a major re-write for publication)</th>
<th>Review identifies some major issues</th>
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<th>Criteria are those for CR except that</th>
<th>Arguments are correct/mostly correct but are rather limited in scope</th>
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<tbody>
<tr>
<td>▪ Comments are essentially descriptive</td>
<td>▪ All/most sections lack some details</td>
<td>▪ The results lack many key details</td>
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<td>▪ Minimal critical analysis is attempted</td>
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<tr>
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<td>▪ OR some statistical analyses inappropriate</td>
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<tr>
<td>▪ OR analysis is somewhat confused</td>
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<td></td>
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<tr>
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<td>▪ OR few to no biases and limitations of study discussed</td>
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<table>
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<tr>
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<th>Review identifies some major issues</th>
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<th>Criteria are those for CR except that</th>
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<td>▪ OR some major errors in logic occur</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Fail (unsatisfactory work &lt;50)</th>
<th>Review skips or skirts essential issues</th>
<th>The research design is fatally flawed</th>
<th>Results for key aims/questions are not reported</th>
<th>The candidate appears to lack a coherent grasp of the material</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Poor understanding of key concepts</td>
<td>▪ OR the design does not address key aims</td>
<td>▪ OR serious inconsistencies appear in</td>
<td>▪ OR major issues are not addressed</td>
<td></td>
</tr>
<tr>
<td>▪ Isolated issues dealt with adequately but no evidence of synthesis</td>
<td>▪ OR major sections are omitted entirely</td>
<td>▪ the results and most statistical analyses inappropriate</td>
<td>▪ OR arguments are absent or illogical</td>
<td></td>
</tr>
<tr>
<td>▪ Creates a sense of fragmentation and incoherence</td>
<td>▪ OR setting out is so eccentric that the plan is incomprehensible</td>
<td>▪ OR expression is incomprehensible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Comments are largely/entirely descriptive</td>
<td>▪ OR the plan involves clear violation of the standards of ethical research</td>
<td>▪ OR flaws in existing evidence and in study design are completely ignored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ May contain serious errors of fact</td>
<td></td>
<td>▪ OR arguments are a clear distortion of existing knowledge/evidence</td>
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</tr>
</tbody>
</table>

*Adapted from academic guidelines proposed by the Faculty of Health Sciences and Veterinary Public Health Management Program, Research Project Guidelines, The University of Sydney.*
2.2 **Honours Application Form**

<table>
<thead>
<tr>
<th>Proposed Research Title</th>
</tr>
</thead>
</table>

**Applicant Details**

<table>
<thead>
<tr>
<th>Veterinary Student’s Name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Student ID</td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>Telephone</td>
<td></td>
</tr>
<tr>
<td>Email</td>
<td></td>
</tr>
</tbody>
</table>

**Proposed Research Supervisor Details**

<table>
<thead>
<tr>
<th>Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>Telephone</td>
<td></td>
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<tr>
<td>Email</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
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</thead>
<tbody>
<tr>
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<td></td>
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<tr>
<td>Telephone</td>
<td></td>
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<tr>
<td>Email</td>
<td></td>
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</tbody>
</table>

Enrolment in Honours Electives is subject to approval by the Honours Committee.
Honours Application Form (cont’d)

Introduction
Introduce your research area and research problem; provide an overview of the background to this problem; indicate the scope of your research; present a case for why this research will be valuable

Statement of aims and objectives
What is the overall aim of this research; what are the objectives which will be met to achieve this aim

Statement of methods
How will you answer the research question and achieve your research aim and objectives

Statement of financial considerations
What are the financial implications of your research and how will this project be funded

Statement of ethical considerations
What are the ethical implications of your research and how will these be addressed

Statement of timescale
What are the major milestones for your research to be completed on schedule; attach a Gantt chart summarising the tasks required to complete this research, key dates and milestones and who is responsible

2.3 Research Progress Report Form
<table>
<thead>
<tr>
<th>Veterinary Intern Name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Student ID</td>
<td></td>
</tr>
<tr>
<td>Research Project Title</td>
<td></td>
</tr>
<tr>
<td>Expected Submission Date:</td>
<td></td>
</tr>
<tr>
<td>Research Supervisors Name:</td>
<td></td>
</tr>
<tr>
<td>Research Supervisors Email Address:</td>
<td></td>
</tr>
<tr>
<td>Research Supervisors Phone</td>
<td></td>
</tr>
</tbody>
</table>

*This section should be completed by the Candidate*

Comment on how you came to your research topic

What have you achieved up to this point (link this to your Research Proposal)?

Comment on your perception of your progress (link this to your Research Proposal).

Have you identified any difficulties and what are you doing to overcome these?

Do you require any additional help, if so what do you think you require?

*This section should be completed by the Supervisor*

Supervisor’s feedback
### 2.4 Research Supervisor Report Form

<table>
<thead>
<tr>
<th>Veterinary Intern Name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Student ID</td>
<td></td>
</tr>
<tr>
<td>Research Project Title</td>
<td></td>
</tr>
<tr>
<td>Research Supervisors Name:</td>
<td></td>
</tr>
<tr>
<td>Research Supervisors Email</td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
</tr>
<tr>
<td>Research Supervisors Phone</td>
<td></td>
</tr>
</tbody>
</table>

**Key to Grades:**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsatisfactory</td>
<td>Insufficient progress towards meeting the descriptors within this criterion by graduation with a definite requirement for remediation in a number of areas</td>
</tr>
<tr>
<td>Marginal</td>
<td>Requires some remediation to adequately progress towards meeting the descriptors within this criterion by graduation</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>Generally meeting the expected level of progress for achieving this criterion by graduation</td>
</tr>
<tr>
<td>Proficient</td>
<td>Generally meeting and occasionally exceeding expectations for achieving this criterion by graduation</td>
</tr>
<tr>
<td>Outstanding</td>
<td>Consistently exceeding expectations for achieving this criterion by graduation</td>
</tr>
</tbody>
</table>
1. Acquisition of research skills

Key terms: critically evaluate, planning and execution of research, report results, technical skills

Students should be able to critically and independently evaluate the literature of their own and related research fields, to be able to recognize a research problem (and to establish its significance); to be able to plan and develop a potential solution, to execute, critically evaluate and report (in several formats) on that solution (including critical reflection on progress), to understand the theory, operation and appropriate application of relevant techniques, instrumentation and methodologies.

<table>
<thead>
<tr>
<th>Un satisfactory</th>
<th>Marginal</th>
<th>Satisfactory</th>
<th>Proficient</th>
<th>Outstanding</th>
</tr>
</thead>
</table>

Comments

2. Appreciation and understanding of the research environment

Key terms: research ethics, good research practice, financial appreciation, justification of methodologies

Students should understand and appreciate the ethical, OH&S, and IP issues of their and related research, be skilled in good research practice, understand how research is funded and evaluated (including government- and contract-funded research) and be able to justify their selection of techniques and methodologies (used and not used) in their research.

<table>
<thead>
<tr>
<th>Un satisfactory</th>
<th>Marginal</th>
<th>Satisfactory</th>
<th>Proficient</th>
<th>Outstanding</th>
</tr>
</thead>
</table>

Comments

3. Understanding of the management of research

Key terms: manage, prioritise, data management skills, leadership

Students must be able to manage their own research, setting goals, milestones, priorities, ensuring the security of their data, developing skills in accessing and manipulating bibliographic resources, archives and databases and to develop IT skills for database management, manipulation, recording, retrieving and presenting information. Throughout their candidature, students should be developing their research management skills from the management of their own research towards the next step of taking a role in the management of a group and having the capability (with additional training) to ultimately lead a group themselves (be it in research or elsewhere).

<table>
<thead>
<tr>
<th>Un satisfactory</th>
<th>Marginal</th>
<th>Satisfactory</th>
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</thead>
</table>

Comments
### 4. Enhanced personal effectiveness

**Key terms:** initiative, self-reliance, limitations, motivated, flexible, receptive, thorough

Students should develop and exhibit initiative and self-reliance, the ability to identify the need for extra skills or training and a willingness (and the ability) to learn new knowledge, techniques, etc. At the same time, students need to recognize when and how to draw upon the experiences and expertise of others. They should be self-motivated, curious, creative and innovative, flexible, and receptive. Students should be informed risk-takers. Additionally, they must learn to strike the right balance of self-discipline, thoroughness and rigor.

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<thead>
<tr>
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<tr>
<td>Comments</td>
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</table>

### 5. Effective communication skills

**Key terms:** coherently articulate both orally and in writing, defend research outcomes, persuade and inspire

Students should be able to write clearly and concisely for a variety of audiences (thesis examiners, journal editors and readers, patent examiners, research contractors, etc.) and to be able to coherently articulate and defend their ideas, arguments, interpretations and research outcomes. They should be able to do this formally and informally, orally and in writing, using a variety of techniques (from the blackboard, through to conference presentations or an oral thesis defence). To be effective in their future careers, they must learn how to convince a lay audience of the merit of their research and that of their field, and, whether or not they aspire to an academic position, be able to teach and mentor others (students, support staff, the public, etc.) by doing, telling, showing, etc..

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<tr>
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### 6. Team working and leadership skills

**Key terms:** structured, logical, key aspects, clear, accurate, concise, consistent verbal and non-verbal

Students must learn to work as, and to adopt leadership roles in, their team, working effectively with supervisors, peers and less experienced colleagues. They must understand how their behaviour impacts on others with whom they must meld into a team, and how to best use the skills within that team. Students need to be able to listen, to give and receive feedback and to provide a considered response to the comments of others. In particular, they must critically evaluate, not uncritically follow, advice.

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<thead>
<tr>
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### 7. Planning, career development skills, introspection

Key terms: career planning, goal setting, evaluating personal progress

Students need to be able to take control of their own careers. They should understand that they have developed a set of transferable generic skills and be able to recognize how those skills can be applied within and outside the research environment, and be alert to the exploitation of career opportunities. They should have thought about (hopefully, but not always, planned) their career possibilities and progression, and should be effective as their own advocates through CV’s, applications and interviews. During their candidatures, students should be refining their abilities to set realistic and achievable career goals and to evaluate (and if necessary reprioritize) progress towards those goals. An important element of these skills is recognizing the need for, and means of obtaining, further skills (through various forms of professional development).

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**Comments**

**Additional Comments**

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2.5 Guidelines for Case-based Research

The dissertation should generally result in a document that is in the format suitable for publication as a journal article. In many cases, the final year program and your experience will be best developed into a case study or case study series. The following guidelines have been taken from the Research Project component of the Masters in Veterinary Clinical Studies.

2.5.1 What is case-based research and how should it be reported as a journal article

A case-based article tells a clinical story that has unique value to the profession. In some circumstances the study is focused on one animal (case-study), whilst in other circumstances it is based on a number of animals (case series study – usually three or more animals). In a case-based article, the clinical case(s) is/are examined in the context of current scientific knowledge and is/are shared for the purpose of educating others or stimulating further scientific inquiry and the development of a new understanding or knowledge. Some cases are published because they support findings of previously published cases or because they illustrate an important point in the care of an animal. Case-based studies serve as foundational elements for more sophisticated scientific endeavours.

On a practical level, the sharing of lessons learned through case-based articles can improve the quality of animal health and can help to reduce the sense of isolation experienced by many veterinarians. The following types of cases are worth reporting:

1. Uncommon observations
2. A new theory or technique
3. Questions regarding a new theory or technique
4. Unusual combination of conditions or events that cause confusion
5. Adverse responses to therapies
6. Personal impact
7. Very common observations or practices that have not been documented previously
2.5.2 How to turn a case-based study into a journal article

Case-based research will often be the first type of publication in a veterinary career. Regardless of your career aspirations, writing up case-based research for publication will be a valuable experience and enhance your career. A case report published in a veterinary journal is a useful way of communicating information about a rare or unreported feature, condition, complication, or intervention. Like any research, case-based research requires a lot of hard work.

Articles derived from case-based research are commonly accepted for publication because of either rarity of the condition or because it is adding new information/insights about the condition. Case series articles can be quite powerful, as there are opportunities to collate, summarize and evaluate (sometimes statistically) information in a manner similar to an experimental scientific study. Case series articles are often derived from both retrospective and prospective studies.

2.5.3 Stages in writing a case-based article

1. Finding a rare case or collect a series of cases that provide important information for dissemination
2. Literature search
3. Collecting information related to the case(s), including consent
4. Summarising, evaluating and writing
5. Revising and editing

You should draw on your supervisor’s experience - they may know from their experience what cases are suitable for publication.

To support the need for your case report, conduct a search of relevant literature. You should draw on databases such as Pubmed, Medline, Ovid, Embase to locate information related to the condition or feature you are after. Narrow down the search to your actual topic. If this comes up with very few search results, it means (assuming your search method is correct) that the condition is rare and the report is, therefore, more likely to be published. It is also useful to read a standard textbook, which are referred in your study guide(s). Be sure to discuss the findings of your literature search with your supervisor early on.
The library staff Karen Black karen.black@sydney.edu.au Sarah Graham sarah.graham@sydney.edu.au and Steve Kennedy steve.kennedy@sydney.edu.au can help in different ways. Discuss your topic with them if you experience any difficulties with your search.

2.5.4 How to collect information related to the case

In order to put your case report together, you will need to collect all your materials – the results of your literature search, your case notes, findings of other veterinarians involved in the case, radiographs, pathology reports etc.

For a case series you may well wish to review past cases (retrospective) but also plan for detecting future cases (prospective). This may even involve trawling for new cases from many sources. It is advisable to discuss with your supervisor the requirements for any statistical analysis.

2.5.5 How to write a case-based article

It is important to realize that journals vary in how they like case-based articles structured. So, your first port of call in writing an article is to decide on a journal and then read carefully the instructions for authors. The Australian Veterinary Journal, for example, has a clinical section and clearly defined guidelines for case-based articles available from the following website: http://www.blackwellpublishing.com/submit.asp?ref=0005-0423&site=1

The following provides some generic guidelines for writing a cased-based article.

Introduction: This section gives the background to and justification for the topic. The research question/problem, aims and purpose should be clear and should be reflected in the title.

Literature Review: You should review literature that is relevant. You will need to go beyond a description of the literature, providing critical evaluation that points logically to the need for your study.

Case History: (Depending on the case). Provide a clear and succinct history of the case that provides all the contextual information necessary for the reader to identify the significance of the case. If it is more appropriate you could include this in your case description.
**Methods:** (Depends on the journal). If appropriate to your case, give details of physical examination or other actions taken. Your actions should be appropriate to the field and replicable by others. If you conducted statistical analyses or other methods, these might be best described here.

**Case Description:** You need a clear summary of the information surrounding the case including important and relevant findings, details of your study, your actions and their outcomes. It is a good idea to try to avoid including any details that are unnecessary. It would be best if this section engages the reader, like a good story.

**Outcome:** The outcome of the case should follow logically from your research question or problem, the case history and your actions. In some cases it may be more appropriate to include the outcome at the beginning of your discussion.

**Discussion:** Probably the most important section of your report for the purpose of publication, your discussion should provide an analysis of the case, linking it to the background and relevant literature. You need to provide your own viewpoint and consider alternative explanations that the reader may consider. You should ensure that your message is clear and gives an obvious significance to the case in the context of existing literature and practice. Consider:

1. What makes your case different?
2. What makes it a useful addition to the literature?
3. What recommendations can you make as a result of your study?
4. What lessons might be learned as a result of your study?

**Conclusions:** Based on your discussion you should make conclusions that follow logically from your aims and your research. This could include recommendations for clinical practice or for further research.

**References:** Ensure you have referenced your report appropriately. Keep to the style that your journal requires. You are encouraged to use EndNote (see [http://www.library.usyd.edu.au/databases/endnote/getting_started/endnote9.html](http://www.library.usyd.edu.au/databases/endnote/getting_started/endnote9.html))
# Checklist for Case-Based Article Authors

## Introduction

- Is the rationale for reporting the condition adequately explained? ☐
- Is the rationale for reporting the condition adequately substantiated by references? ☐
- Have you clarified your reasons for undertaking this study? ☐

## Case Description

- Is/are the case/cases described adequately, briefly and clearly? ☐
- Are the results of any investigations described adequately (this may go into a methods section if warranted eg statistical analysis)? ☐
- Are the results of less common laboratory investigations accompanied by reference intervals? ☐

## Discussion

- Is the evidence to support the authors’ diagnosis presented adequately? ☐
- Is the evidence to support the authors' recommendations presented adequately? ☐
- Are other plausible explanations considered and refuted (remember to use the literature)? ☐
- Do authors indicate directions for future investigation or management of similar cases? ☐
2.6 Faculty Graduate Attributes

1. Research and Inquiry. Graduates of the Faculty of Veterinary Science will be able to create new knowledge and understanding through the process of research and inquiry.

   A. Apply an understanding of normal and abnormal animal structure, function and behaviour for diagnosis, management and prevention of animal disease

   B. Identify, define and analyse problems affecting animal health and production

   C. Collect and use the best available evidence to diagnose, prevent, cure or manage animal health problems

   D. Maintain effective skills for identifying and responding to emerging animal diseases and issues

   E. Engage in research-based practice, using critical judgment and creativity

   F. Collaborate in the generation, application and dissemination of new knowledge to benefit animal health and welfare

   G. Have an informed respect for the principles, methods, standards, values and boundaries of their discipline and the capacity to contribute to and question these

   H. Critically evaluate existing understandings and reflect on the limitations of their own knowledge

2. Information Literacy. Graduates of the Faculty of Veterinary Science will be able to use information effectively in a range of contexts.

   A. Identify acquire, store, retrieve, interpret, critically evaluate and use scientific, clinical and other relevant information in print and electronic sources

   B. Prepare a scientific or clinical report in a form suitable for publication and presentation
C. Use networked services and information technology efficiently in research, professional development and practice management

D. Investigate emerging technologies and determine their relevance to the profession

3. **Personal and Intellectual Autonomy.** Graduates of the Faculty of Veterinary Science will be able to work independently and sustainably, in a way that is informed by openness, curiosity and a desire to meet new challenges.

A. Make independent, informed professional decisions and implement them in managing animal health

B. Evaluate one’s own abilities, identify deficiencies and commit to continuing professional learning

C. Identify situations where additional expertise is necessary, seek specialist services and refer patients professionally

D. Prepare a curriculum vitae, identify work opportunities, apply, present at interview and negotiate an employment contract

E. Have the capability and commitment to initiate and respond to change

F. Develop a capacity for managing one’s own personal, physical, emotional and social needs to sustain satisfaction and contribution to profession

4. **Ethical, Social and Professional Understanding.** Graduates of the Faculty of Veterinary Science will hold personal values and beliefs consistent with their role as responsible members of local, national, international and professional communities.

A. Practice veterinary science professionally:
   - with primary consideration to the welfare of the animals in care
   - to uphold the ethical standards and legal requirements of the profession
   - to meet the health and safety needs of oneself, colleagues, ancillary staff, clients and the community
   - with colleagues, ancillary staff, clients and the public with respect and without discrimination
B. Apply the principles of animal welfare to the humane management and euthanasia of animals

C. Ensure animal products are free of chemical residues and other contaminants

D. Protect the natural environment, maintain biodiversity and conserve endangered species

E. Ensure sustainability of agricultural activities through the practice of veterinary science on livestock that considers the economic and social needs of farms and the livestock industries

F. Practice veterinary science in Australia with awareness of the need to keep Australia free of non-endemic diseases and ensure exported animals are free of disease

G. Practice veterinary science in countries other than Australia with awareness of local differences

5. Communication. Graduates of the Faculty of Veterinary Science will recognise and value communication as a tool for negotiating and creating new understanding, interacting with others, and furthering their own learning.

   A. Communicate effectively in English, both orally and in writing, with a variety of recipients and audiences and using a variety of media

   B. Consult effectively, eliciting the history and clinical signs from clients systematically and with sensitivity

   C. Prepare and maintain records of clients and animals and the results of veterinary interventions and procedures promptly, accurately and concisely

   D. Work effectively as individuals, partners and as members of a team

   E. Contribute or lead a group in cooperative problem-solving

   F. Communicate with colleagues, ancillary staff, clients and the public with patience, empathy and compassion.