The University of New South Wales
School of Aviation

AVIA5020 – Research Project
2016 Course Outline

Course Administration

Academic Facilitation: Jason Middleton - j.middleton@unsw.edu.au
Administration: Mrs Jamie Lim – aviam@unsw.edu.au or +61 (2) 9385 6767
Prof Middleton will normally supervise the project.

Course Overview

The project must involve an original investigation to determine answers to questions that are pertinent and useful to development in some area of aviation. The project should be significant and of substantive depth (so as to be equivalent to 1/8 of a year's academic work, and typically that required for each of the postgraduate course work courses, i.e. 100 hours). It may involve researching aspects of the student's employment organizational functions, or some other area of interest.

The AVIA5020 project can be either a comprehensive literature review or a short piece of original research. The idea is that the latest and highest quality information is found. Techniques include the university electronic library database through which the “Web of Knowledge” and “ Web of Science” may be accessed. This world of research journal and articles is one rarely available to industry workers, and learning to use this effectively is an important ability that should develop through the AVIA5020 project activity. A guide to accessing the Web of Science and Web of Knowledge is available on the Moodle AVIA5020 website. You will need to login to the UNSW library using your student number and password.

The AVIA5020 Literature Review Project

This should utilize research journals as far as possible where they exist, government reports, and sometimes organisational reports. Books and web sources (unless from government agencies such as CSIRO, NASA, Bureau of Transport and Regional Economics, IATA etc) should be rarely used if original literature is available and then carefully scrutinized first, as they may be biased or have unsuitable scope or depth.

Rigorous referencing is vitally important, so that any reader can be sure the report is comprehensive in scope. The writer should be sure to point out discrepancies in philosophies or in results in the latter sections of Results and Conclusions. The depth of understanding needs to be such that the writer shows a clear understanding of the more complex issues, not simply the basic ones, and can clearly understand the nature of apparently opposing views or results. The writer should write at a level that his/her peers in their organisation can understand, using standard terminology for that topic.

The AVIA5020 Original Research Project

Such projects will need to be approved by Head of School as the feasibility of doing acquiring original data or doing an original analysis may be practically difficult or even impossible in the time available. Surveys or other research activities which require UNSW Ethics Approval are strongly discouraged because of the time it can take to get the research approved by the UNSW ethics committee, compared to the 12 week semester.

Learning Outcomes

The main aim of the course is to provide students with practical skills in one of two forms of research relevant to the applied aviation environment. The first form is the use of research to review, critique and analyse existing literature to provide a summary of the current state of knowledge (sometimes solutions) to issues in the aviation industry. The second form deals with using primary or

secondary data in providing solutions to issues in the aviation industry. These forms will be called Literature Analysis and Applied Research respectively.

It is part of the Master of Aviation Management program design that students are able to take initiative and use their imagination to solve problems in the industry using research, hence the identification and formulation of a research project is strong indication of the students capability of passing the requirements for the Masters course. However for students not in the industry there maybe some problems in selecting an appropriate project and hence there maybe avenues for students to be set projects with the School of Aviation's academic staff. (Note that of the ~400 students who have done this course, less than 10% of students fell into this category). There is more on these aspects later.

Enrolment

The student can enrol in either Semester 1 or Semester 2, and the work should be completed within that semester. Each semester is a total of 12 weeks. Extensions beyond a single semester are not automatically given, and must be applied for in writing. Failure to meet submission deadlines (without approval) will result in late submission penalties equalling 10% per day, including weekend and public holidays.

Proposed Research Topic - Prior to Enrolment

After enrolling in AVIA5020 the student should contact the AVIA5020 Course Administrator (currently Jason Middleton on j.middleton@unsw.edu.au) via email outlining their research area of interest. The initial email should only be sent once the student has sufficiently researched the area of interest and ascertained that sufficient data and/or information is probably available to support the project. The Research Proposal should in a maximum of 2 to 3 pages briefly:

- Describe the topic of interest,
- Outline why research is necessary in this area,

- Describe how the research will be conducted or what theories/models with be examined,
- The anticipated results/outcome of the research, and
- The extent to which the results are applicable to other areas/industries, or implications of the results.

You should indicate whether you plan to do a formal Literature Review form of report or a research project using primary or secondary data.

If you are not in the aviation industry and unable to identify a reasonable project then the Aviation Course Facilitator will discuss with you possible projects.

Structure of the Research Proposal

The Research Proposal should be submitted no later than the end of Week 2, and should be structured as follows.

COVER PAGE,

Including title, student name and number, and supervisor's name.

1. AIMS

These should be practical, and achievable within the time frame of one session. The aims should be to produce results and conclusions which are of an original nature, not simply a regurgitation of another summary.

2. BACKGROUND

This section should demonstrate the need and importance of the proposed research, and include a limited literature review to determine that the proposed work has not yet been undertaken.

3. METHODOLOGY

This section should describe the methodology which is to be used in sufficient detail that the student has a clear understanding of the depth and scope of the information and/or data to be acquired and analysed. A time frame of the study should be included here. If the project solely comprises a Literature Review, then the methodology should state what sort of literature is expected to be accessed and why.

4. REFERENCES

A short list of pertinent references, pertinent to the Background and Methodology, and referred to therein, should appear here. The preferred referencing system is described on p6 of this outline.

Aviation's AVIA5020 Course Facilitator (currently Jason Middleton) will review the proposed research topic and may assign a supervisor within the School of Aviation who is familiar with the chosen area, or may be the supervisor. The appointed supervisor will provide comments on the proposed research topic, and approve the project and research topic for enrolment to proceed. Course enrolment dates are around mid February (S1) and mid July (S2), therefore proposed research topics should be submitted as soon as possible to enable feedback and approval.

Research Report

Once enrolled, the student's responsibilities are two-fold.

- Firstly the student should follow the proposed course structure and complete the required readings (see Structure section).
- Secondly, the student should be in regular contact with the supervisor (typically once each week or two), ensuring the planned work proceeds successfully and at an appropriate pace. If you are unable to contact your supervisor then please try the Course Facilitator (Jason Middleton) or Jamie Lim.

By week 5 of the semester the student must submit a summary of progress describing the progress made. The format of this progress report is open, but should include a description of how you are proceeding with your plan, and if anything in your plan needs to be changed.

The final Research Report should be a complete description of the project aims, motivation, methods, and conclusions, and be self contained and written in a professional manner. A research paper structure is often a good way to present your work. A good example of research paper structure appears in the journal "Safety Science", which is an Elsevier Publication, available through the UNSW e-library. References within the text are indicated by

author(s) name and date of publication, and a complete list of all references appears in alphabetical order at the end of the paper. References do NOT appear as footnotes in this journal.

There are few if any footnotes in Safety Science, and in general, footnotes should not be used. If the information is important it should be embedded within the text, if less important, it can be referred to, or ignored.

Figures and tables should have captions describing the content of the figures or tables. If axes are used in diagrams, these axes should be labeled. Tables should have columns and rows labeled so the reader knows what the data is. If data or a diagram appearing comes from elsewhere, the source must be referenced.

Structure of the Research Report

The Report should include:

COVER PAGE

Including title, student name and number, supervisors name, and date

ABSTRACT

A one-page summary of the entire report indicating the question(s) to be answered, the general methodology used and the key results.

INTRODUCTION

This should provide motivation for the study described, i.e. why it is important, and describe one or two key references which indicate that importance.

AIMS

Describe the aims of the project in general, and if needed, add specific items. This will follow on the lines as described listed in the Research Proposal.

METHODOLOGY

This section should describe the methodology which was used in sufficient detail that the study could (in principle) be replicated. If the report is solely a literature review then state the main types of literature used, their source, and why this literature is used.

RESULTS

This might comprise of several sections describing the detailed research activities undertaken in a logical manner, and the results thereof. The concepts which are being discovered must be put into a logical framework so the reader is led to understand the key knowledge which presently exists and any new original knowledge which has been found. It is not suitable to simply paraphrase each reference one by one, rather a holistic summary is needed, with contrasting views and results from other authors put into an objective framework of analysis.

CONCLUSIONS

This section requires a summary of the main conclusions reached, their relationship to the original aims, and their significance. This is the only section where the author should provide any critical review which includes their own opinions. The authors' opinions must clearly be referenced as such.

REFERENCES

A complete list of all cited references in alphabetical order, done in standard form: eg

Braithwaite, G.R., J.P.E Faulkner and R.E. Caves (1998) Australian Aviation Safety – Observations from the lucky country, Journal of Air Transportation Management, Vol 4, p 55-62.

Shorrock, S.T. (2005) Errors of memory in air traffic control, Safety Science, 43, 571-588.

Wu, C.L. (2010) *Airline Operations and Delay Management,* Ashgate, 241pp.

Civil Aviation Safety Regulations 1988, CASR 1998:

Part XX, Page YY, Civil Aviation Safety Authority of Australia (http://www.casa.gov.au/Scripts/nc.dll?WCMS:STANDARD::pc=PC_90991

Submitting the Research Report

Official submission date for the final report is midnight on **Monday 13 June 0900** for Semester 1, and **Monday 7 November, 0900** for Semester 2.

Failure to submit a final report by the due date may result in a course failure**,** unless an extension has been granted prior to the due date. If students are

unable to submit their final report by the due date, they must contact the course facilitator including:

1. Reasons and circumstances why the report is late,
2. Documentation providing supporting evidence (if available), and
3. An alternate submission date with a time outline indicating milestones.

**Please note, report extensions are not automatically granted and each application will be assessed on its merit. A 10% per day (including weekends and public holidays) late submission penalty will apply to all reports submitted post due date if extensions are not granted **

Marking of the Research Report

The Research Report will be marked by a minimum of two assessors, and reviewed by the Course Facilitator (Prof Middleton). The School of Aviation will approve the final mark.

References

There is no set text for this course. Also included in the handouts is:

Middleton, J.H. (2013) *Research, What is it and How is it Reported?* Unpublished Notes, 5pp.

Also, there are some books which might be useful for advice on how to write reports. If you propose to do the Literature review form of report then you might look at:

Hart, C. (1998). *Doing a literature review: Releasing the social science imagination.* London: Sage Publications.

For the Applied Research reports using data then the following is recommended-

Wiggins, M. W., & Stevens, C. (1999). *Aviation social science: Research methods in practice.* Aldershot, UK: Ashgate.

Formatting matters

Word Limit

The word limit is 5,000 words (+/- 10%) of text with references, tables and appendices extra. Discuss with the Course Facilitator if the limit is unmanageable, but that usually means you have added too much waffle. The reports style is meant to be similar to a journal article or report to the management of a company or aviation authority.

Report Assessment

The Report is to be written in English using standard English grammar, punctuation, syntax and spelling. The project report will be evaluated according to the form appearing directly below.

AVIA5020 Research Report
2016 Marking Schedule

Project Title: _____
Student Name: _____
Assessor: _____

General (structure, clarity, spelling, presentation, grammar, reference, length): (20%)

Introduction (issue, definition, significance, prior research, clear definition of aims): (20%)

Methodology (how you have sourced information, and collated it: evidence, objectivity and relevance are important . For a literature review use academic, government and industry references, and provide a logical juxtaposition of viewpoints): (20%)

Evaluation (objective and concise analysis of results. For a literature review, the viewpoints as found in the literature should be compared, contrasted and evaluated. The students opinions are not to be used here.): (20%)

Conclusion (What has been found: relation to aims, succinct yet salient, implications. This section can include the student's opinions but only if argued from the literature referenced or results found): (20%)

Total Mark:_____ %

Marking Scheme

The following Marking Scheme has been adopted from The University of Exeter – Department of Psychology for use within UNSW Aviation. The marking scheme explicitly outlines what is expected from students and the respective grade if achieved. The marking scheme should be interpreted in context to the intended learning outcomes of the course.

High Distinction: Marks 85% -100%
The work is exceptional (unique and outstanding). It attains the highest standards of scholarship expected for the discipline without the need for revision. It would be difficult to recommend improvements in any way. In all cases, the work goes far beyond that expected of a good student, with the higher mark demonstrating greater comprehension, insight and originality at this level. In other words, the work should be of publishable quality (i.e., Journal quality). Only the top 5-10% of projects will be in this band.

Distinction: 75% - 84%
The work is excellent. It shows originality, a critical awareness of the principles and practices of the discipline, thorough comprehension of the assessment's requirements, exceptional ability, insightfulness, and fully realises learning outcomes for the assessment and develops them far beyond normal expectations. It would be difficult to recommend more than minor improvements. In all cases the work goes well beyond that expected of a good student at the appropriate level, with the higher mark demonstrating greater comprehension, insight and originality at this level. In other words, the work should be publishable with minor amendments (i.e., Journal quality). This band will include the next ~15-20% of projects in quality.

Credit: 65% - 74%
The work is above average. It shows real insight and originality, is logical and articulate, and demonstrates a comprehensive coverage of subject matter, engagement with scholarship and research, very good analytical ability, and contains no major flaws. It would be possible to recommend some improvements. In all cases the work goes beyond that expected of a good

student. The higher mark demonstrating greater comprehension, insight and originality at this level. In other words, the work should be publishable with some editing from supervisor (i.e., Journal quality). This is a band where ~ 30-40% of projects will likely sit, on average.

Pass: 50% - 64%
The work is average to very good, sound and well thought out, shows an organised, secure knowledge of the subject, and an appropriate use of critical references. It broadly realises the intended learning outcomes, and demonstrates good analytical skills. Higher marks in this category indicate that more critical evaluation of theory and empirical evidence has been demonstrated. Lower marks may be used when the work is more descriptive, and can also indicate some flaws or errors. In all cases the work is at least at the standard expected from an average student at the appropriate level. The work is not expected to be publishable without significant input and editing (i.e., Journal quality).

Fail: <50%
The work is weak and poor in quality. It shows limited evidence that the learning outcomes having been achieved, but is muddled, poorly argued, has an inadequate deployment of critical method, lacks focus and depth of understanding. Some important elements are missing, there are significant errors, and the work reveals serious deficiencies in analytical skills. Lower marks in this category indicate more omissions, errors or inadequacies. In all cases the work is weak in comparison to the standard expected from an average student at the appropriate level.

FAQs

Q: Should I get a textbook? Not usually, but see the information above. Other references are:

Bell, J. (1999). *Doing your Research Project: a Guide for First-Time Researchers in Education and Social Science*. Milton Keynes, England: Open University Press. Earlier editions: S 370.78/100, G 370.78/100 A.

Blaxter, L., Hughes, C., & Tight, M. (1996). *How to Research,* Buckingham: Open University Press, 1996. Earlier editions: G 001.42/34

Corbetta, P. (2003). *Social Research: Theory, Methods and Techniques*. Thousand Oaks, CA: Sage Publications.

Creswell, J.W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Method Approaches (2nd Ed.)*. Thousand Oaks, CA: Sage Publications. S 300.72/239 C.

Gray, D.E. (2004). *Doing Research in the Real World*. Thousand Oaks, CA: Sage Publications.

Kumar, R. (2005). *Research Methodology: A Step-by-Step Guide for Beginners* (Second Edition). Melbourne, AUS: Addison Wesley Longman. First edition in library: S 001.4/33C, S 001.4/33D.

Rozakis, L.E. (2004). *Complete Idiot's Guide to Research Methods*. Alpha books.

Sternberg, R. J. (2005). *The Psychologist's Companion. A guide to scientific writing for students and researchers.* New York: Cambridge University Press.

All of the above are available via the UNSW Bookshop or in the UNSW library. Other books, journal articles, conference proceedings, proposals, etc., and will depend on your chosen topic for research. You will find that safety-related books and periodicals are spread among various sections in the library – use the Library Resource Database.

Q: How can I find relevant literature?

A good place to start is the 'Aviation Subject Guide', available via the library website. The best source is via the "Web of Knowledge" or "Web of Science" or "Scopus". Instructions to access these literature data-bases are included as a separate attachment in Moodle. Some databases are available to help you search for specific literature and publication details, e.g. 'Ergonomics Abstracts' (abstracting service for ergonomics/human factors - abstracts and publications details only) and 'Science Direct' (Elsevier journal publications only - full text). You can access many electronic journals via the library databases. Contact the library staff if you experience problems getting a publication.

Q: What if I want to use human subjects even with a survey?

Please note, if you are considering primary research involving human subjects, in the majority of cases ethics approval from UNSW Ethics Panel or Committee is required. It is strongly advised that you discuss this with your supervisor prior to conducting this type of research as the ethics process is resource and time intensive. Failure to obtain 'Ethics Approval', if required will result in automatic course failure. In addition, students should discuss their methodology in detail with their supervisor prior to commencement. This will be achieved by firstly writing a research proposal before the research proper is undertaken.

Q: How long should my report be?

We suggest your reports should be no more than 5,000 words not including references. This is very easy to reach. Please provide a word count in the front matter of your assignment. We are more interested in quality than word length. A 20 page report that demonstrates a significant amount of work will outshine a 30 page report full of waffle. Use appendices if necessary for technical detail (these are not included in the word count).

Q: How should I submit my report?

You must submit your report both electronically and in hard copy. A total of one (1) hard copy reports must be submitted.. A signed cover sheet **must** be

placed in the hard copy .

1. Electronic copy, sent to j.middleton@unsw.edu.au. On your email subject line, include only this text (exactly as shown here):
   AVIA5020 REPORT [YOUR NAME]
   This helps to sort your emails into a folder.
2. 1 x paper copy, submitted to the School of Aviation Postgraduate office, **with** a signed postgraduate assignment cover sheet. This should be posted to:
   Ms Jamie Lim
   Room 205, Level 2, Old Main Building
   School of Aviation
   The University of New South Wales
   Sydney NSW 2052

Q: Where can I get my report professionally bound?

If you want your own hard cover bound copy then the service is provided by-

All States Binding (Sydney) – (02) 9565 5010

Les Baddock Book Binders – Address: 6-8 McGill St Lewisham NSW 2049
Telephone: 9560 9222 Fax: 9569 2221 Website: www.baddocks.com.au

World of Print – Address: Shop1, 180-182 Broadway BROADWAY 2007
Telephone: 9212 4144 Email: thesisonline.com.au

For all other binding services in your area search in your local phone directory or on the Internet with the key search words;

“Hard cover book binding”

“Book publishing”

Q: Can I just adapt a proposal or report from the internet or another student?

No. Your work must be original, and should not even include work you have previously submitted for another assessment task. It is easy to detect plagiarism and it will not be tolerated. Assessors have a lot of experience with

this, and may well have read such work before, or be easily able to find it. Also, electronic submissions will be checked automatically and electronically for plagiarism, using verification software. Any plagiarism will be dealt with according to the University guidelines (see Learning Centre for advice on how to avoid plagiarism). Your final proposal will be partly judged against your research proposal. Markers will look for original thought and words. If you are unsure about what we require in referencing then please ask us. If you think you will go undetected, think again… Students found to have plagiarised previously had to do a lot of extra work to resubmit an entirely new proposal which received a maximum of 50%. In the past, students who plagiarised have received much lower marks than students who have not plagiarised, even if these latter students have problems with English, etc.

Q: What resources are available from UNSW to help me with this subject?

The Learning Centre (http://www.lc.unsw.edu.au/) has a comprehensive set of online leaflets on reviewing literature, note taking, writing, etc. There are also many journals that can be accesses online through the library website (http://info.library.unsw.edu.au/Welcome.html - select **Databases & e-journals**)

Q: What if I produce a really good piece of work?

Reports of a very high standard may be developed further – independently or with your supervisor – and submitted for publication at a future conference, industry magazine, society magazine, journal, etc.

ATTACHMENT 1 – Report Guidelines

The following is guide to Report presentation.

THE UNIVERSITY'S FORMATTING REQUIREMENTS

The conventions listed below need to be understood and applied carefully, as no report can be accepted for examination if it is not formatted in the appropriate manner. For example, every page of text should be set up according to the dimensions given below.

Setting the Margins

Edge	Margin (mm)
Left	40
Right	20
Top	30
Bottom	25

N.B. These are the minimum settings required.

Other University Requirements
Paper size A4 (approx. 297 mm x 210 mm)

Printer
Print using a quality laser printer.

Spacing
Text double-spaced; references one and half spacing: footnotes and quotations are generally single-spaced.

Font
12 point (10 for footnotes); Times New Roman.

Page numbering
All pages must be numbered consecutively from the first page of the introduction to the last page of the proposal. In some cases it is preferable to number the preface and contents pages separately, using Roman numerals.

Contents, Layout and Format of a Typical Report

Title Page

The title page must include; (1) Title of paper, (2) Authors name, (3) Highest degree previously obtained (i.e., B. Aviation Hons), (4) the following statement – A thesis submitted to fulfill the requirements for the degree of Masters of Aviation Management at the University of New South Wales, and (5) Month and year of submission. In addition, you may wish to include a symbol alleging copyright to ensure ownership of your work.

Abstract

A well-prepared abstract enables examiners to identify the objective of the report. The abstract should be not more than 250 words in length (1 page) and be limited to only one (1) paragraph.

Table of Contents

Chapters (or Sections) and sub-headings only. This refers to the body of text and appendices, not to introductory pages.

List of Tables

Tables should be numbered, bear an explanatory legend and be referred to within the text.

List of Figures

Figures and illustrations should be numbered, bear an explanatory legend and be referred to within the text. Where possible graphs and photographs should be displayed and labeled on the same page. If space does not permit you to follow this procedure, type on a separate page and insert the page facing the graph or photograph. Large maps etc. may be folded.

List of Special Names or Abbreviations

Only if appropriate.

Main Body of Text

This may comprise several chapters with different and appropriate titles. Begin each chapter on a new page. The text generally begins two lines below the chapter title.

Reference List

Should follow directly after main body and be titled References. References need to be presented as follows.

Braithwaite, G.R., J.P.E Faulkner and R.E Caves (1998) Australian Aviation Safety – Observations from the lucky country, Journal of Air Transportation Management, Vol 4, p 55-62.

Appendices

These are optional, and should be placed at the end of the Report. The same is true of large tables, which would compromise the readability of the Report is left within the report. Data or appendices may be placed in another volume if the source material is confidential.

Special Enclosure

These might include for example large maps or diagrams. These may be placed in a pocket on the inside of the back cover.