



UNSW Course Outline

AVIA5022 Aircraft Accident Investigation Techniques - 2024

Published on the 07 Feb 2024

General Course Information

Course Code : AVIA5022

Year : 2024

Term : Term 1

Teaching Period : T1

Is a multi-term course? : No

Faculty : Faculty of Science

Academic Unit : School of Aviation

Delivery Mode : Online

Delivery Format : Standard

Delivery Location : Kensington

Campus : Sydney

Study Level : Postgraduate

Units of Credit : 6

Useful Links

[Handbook Class Timetable](#)

Course Details & Outcomes

Course Description

The investigation of aircraft incidents and accidents is now recognised as an essential component of an effective safety management system (SMS). By its very nature, an aircraft accident represents some form of failure of the aviation safety system. In many cases, valuable

insights into the safety health of an organisation can be gained by the effective use of proven incident or accident investigation techniques. Such investigations are necessarily 'reactive' but do provide a valuable 'snapshot' of how flight operations, maintenance practices and general company management were being conducted at the time of the event. When combined with a 'proactive' incident reporting and investigation program (now components of a SMS), the often hidden factors that adversely influence the actions of operational personnel can be revealed.

This fully online course is intended to provide students with a general understanding of the processes of aircraft incident and accident investigation, in order to better understand the role of air safety investigation in the wider aviation safety management context.

The investigation techniques examined in this course are directed solely to the objective of accident prevention. The apportioning of blame or the determination of liability is not part of this process.

The units explored in the course will provide the basic building blocks for a system of investigation based on the International Standards and Recommended Practices, as described in Annex 13 to the Convention on International Civil Aviation, national investigation legislation, the ICAO Manual of Aircraft Accident Investigation, and the ICAO Human Factors Training Manual.

This course is designed for those who have an interest in aviation, and a desire to improve or refresh their knowledge in this fascinating subject.

Course Aims

This aim of the course is to provide an academic environment in which students are actively engaged in the learning process. Activities are linked to both research, scholarship and the real world, with the aim of allowing students to reflect on how accident investigation issues affect them and others in the aviation industry.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Explain the reasons for undertaking an accident investigation, and how to determine the type and level of investigation required.
CLO2 : Describe the personal qualities required of an accident investigator.
CLO3 : Recognise the advantages of adopting a system of investigation, and understand how to utilise such a system within the legislative framework.
CLO4 : Explain the management of complex investigations, including the role of specialist investigators within these contexts.
CLO5 : Examine situations spanning beyond the actions of individuals to identify organisational factors that could adversely affect safety, using analytical, systems-based processes
CLO6 : Summarise the types, formats and contents of accident investigation reports designed to gain the greatest safety benefit.

Course Learning Outcomes	Assessment Item
CLO1 : Explain the reasons for undertaking an accident investigation, and how to determine the type and level of investigation required.	<ul style="list-style-type: none">Assignment 1 – Occurrence ScenarioAssignment 2 – Short Answer and Essay Questions
CLO2 : Describe the personal qualities required of an accident investigator.	<ul style="list-style-type: none">Assignment 1 – Occurrence ScenarioAssignment 2 – Short Answer and Essay Questions
CLO3 : Recognise the advantages of adopting a system of investigation, and understand how to utilise such a system within the legislative framework.	<ul style="list-style-type: none">Assignment 1 – Occurrence ScenarioAssignment 2 – Short Answer and Essay Questions
CLO4 : Explain the management of complex investigations, including the role of specialist investigators within these contexts.	<ul style="list-style-type: none">Assignment 2 – Short Answer and Essay Questions
CLO5 : Examine situations spanning beyond the actions of individuals to identify organisational factors that could adversely affect safety, using analytical, systems-based processes	<ul style="list-style-type: none">Assignment 2 – Short Answer and Essay Questions
CLO6 : Summarise the types, formats and contents of accident investigation reports designed to gain the greatest safety benefit.	<ul style="list-style-type: none">Assignment 2 – Short Answer and Essay Questions

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

Weekly course structure:

Each week is structured in a linear way to support your learning and follows a consistent format comprised of a weekly checklist, introductory video to the weekly material (in the form of a 'Unit'), weekly readings (housed in a centralised online reading list), a "consolidation activity" formative assessment, and reflect and review exercise.

It is expected that you engage with all of the material in a sequenced way to maximise your learning and consolidation of material, and complete each Unit by the end of the respective week.

Assessments are designed in alignment with the course content, and are an opportunity for you to identify strength areas and areas for improvement.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Assignment 1 – Occurrence Scenario Assessment Format: Individual	40%	Start Date: Week 3 : 26/02/2024 Due Date: Week 7 : 31/03/2024. 11:59PM
Assignment 2 – Short Answer and Essay Questions Assessment Format: Individual	60%	Start Date: Week 8 : 01/04/2024 Due Date: 03/05/2024. 11:59PM

Assessment Details

Assignment 1 – Occurrence Scenario

Assessment Overview

For Assignment 1, you will be provided with an occurrence scenario and asked to discuss various aspects of the scenario in a maximum 2000 word essay. Details of Assignment 1 will be released in Week 3. The assignment is to be submitted in Week 7.

Marks and detailed feedback will be provided to you within 10 working days following submission .

Course Learning Outcomes

- CLO1 : Explain the reasons for undertaking an accident investigation, and how to determine

- the type and level of investigation required.
- CLO2 : Describe the personal qualities required of an accident investigator.
 - CLO3 : Recognise the advantages of adopting a system of investigation, and understand how to utilise such a system within the legislative framework.

Assessment Length

2000 words

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Assignment 2 – Short Answer and Essay Questions

Assessment Overview

Assignment 2 covers all material taught throughout the term. The format of this assignment consists of two parts: Part A (total weighting of 20%) and Part B (total weighting of 40%) Details of the assignment will be released in Week 8. You are to submit the entire assignment by the end of UNSW Formal Examination Period.

Part A consists of short-answer questions. You will be provided with a list of questions and required to choose four questions to answer. You are required to answer each of the four questions (including sub-parts of the question) in no more than 500 words and submit the answers as one document.

Part B requires you to answer an essay type question in a maximum of 2000 words. Your answer must include three sections: Introduction, Development and Conclusion, and it must logically detail your argument.

You will be assessed against criteria including how thoughtful, interesting and innovative the responses are.

The purpose of the two parts of this assignments is to test your:

1. knowledge and understanding of the course material,
2. ability to apply that understanding, and
3. ability to critically assess current accident investigation processes and suggest how these processes might be developed and/or improved.

Feedback will be provided to you within 10 working days following submission.

Course Learning Outcomes

- CLO1 : Explain the reasons for undertaking an accident investigation, and how to determine the type and level of investigation required.
- CLO2 : Describe the personal qualities required of an accident investigator.
- CLO3 : Recognise the advantages of adopting a system of investigation, and understand how to utilise such a system within the legislative framework.
- CLO4 : Explain the management of complex investigations, including the role of specialist investigators within these contexts.
- CLO5 : Examine situations spanning beyond the actions of individuals to identify organisational factors that could adversely affect safety, using analytical, systems-based processes
- CLO6 : Summarise the types, formats and contents of accident investigation reports designed to gain the greatest safety benefit.

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

General Assessment Information

UNSW Aviation's decision for Short Extension Policy

The School of Aviation has carefully reviewed its range of assignments and projects to determine their suitability for automatic short extensions as set out by the UNSW Short Extension Policy. After careful consideration of our course offerings and our current structure, we have determined that our current deadline structures already accommodate the possibility of unexpected circumstances that may lead students to require additional days for submission. **Consequently, the School of Aviation has decided to not adopt the Short Extension provision for all its courses and has reassured that flexibility is integrated into our assessment deadlines.** The decision is subject to revision in response to the introduction of new course offerings. Students may still apply for Special Consideration via the usual procedures.

You will be provided with an opportunity to test your understanding of material covered early in the AVIA5022 course through the completion of a formative quiz. The quiz comprises of multiple-choice questions on material covered in Weeks 1 to 3 (inclusive) of the course. It is to be completed by the start of Week 4.

Feedback will be provided immediately upon completion of the quiz, allowing you to self-assess your understanding and areas for improvement in the course.

You will also be provided with opportunities to test your knowledge weekly through a "Knowledge Check" formative assessment, as well as a Reflect and Review activity that allows you to self-assess your confidence in key areas of learning.

It is expected that you engage with all of the material in a sequenced way to maximise your learning and consolidation of material, and complete each Unit by the end of the respective week.

Assessments are designed in alignment with the course content, and are an opportunity for you to identify strength areas and areas for improvement.

Unless otherwise specified, the following criteria will be applied in assessing your written work:

- evidence of understanding of the concepts, theories and ideas developed in the course;
- ability to apply those concepts to situations from your own experience;
- capability to structure an assignment logically and limit it to the length required;
- the degree to which the material submitted for assessment addresses the specified or negotiated assignment requirements; and
- the proper use of grammar, spelling, style, and academic referencing, together with an appropriate mix of research and original thought.

The examiner is looking for interesting and innovative answers and not a 'model answer' derived from the text. Answers that consist of a succession of "quotes" will not attract high marks.

Students are referred to the University's rules on academic conduct, which are contained within the Student Handbook. Specifically, **plagiarism** is absolutely unacceptable and may lead to failure of the course, or in extreme cases exclusion from the University. Students are referred to the University's Student Handbook for full details on academic regulations.

Grading Basis

Standard

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 12 February - 18 February	Topic	Unit 1 The Purpose of Investigation
Week 2 : 19 February - 25 February	Topic	Unit 3 The Accident Investigator
Week 3 : 26 February - 3 March	Topic	Unit 3 The Accident Investigator
Week 4 : 4 March - 10 March	Topic	Unit 4 Legislation and Standards
Week 5 : 11 March - 17 March	Topic	Unit 5 Accident Notification and Response
Week 6 : 18 March - 24 March	Topic	Unit 6 The Accident Site
Week 7 : 25 March - 31 March	Topic	Unit 7 Sources of Material Evidence
Week 8 : 1 April - 7 April	Topic	Unit 8 History of the Flight
Week 9 : 8 April - 14 April	Topic	Unit 9 Human Factors 1 & 2
Week 10 : 15 April - 21 April	Topic	Unit 10 Investigation Reports

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

General Schedule Information

UNSW Aviation's decision to not release Lecture Recordings:

The School of Aviation prides itself on offering education that supports students in their personalised learning journey. This involves providing opportunities for students to engage with academics and key aviation experts to identify and address learning gaps, develop core skills and knowledge, and foster an environment of collaboration and meaningful discussion with the UNSW Aviation community. To support this vision, UNSW Aviation has decided to require students to attend all synchronous lectures (in-person or online) and not release class recordings to the student cohort. If students cannot attend a class and require learning support due to unforeseen circumstances, they should contact their Course Coordinator or Program Coordinator to discuss options for support and making up for missed class time.

Course Resources

Recommended Resources

Reading activities are mentioned throughout the course content (located in the weekly Course Units) and the respective readings can be found in the reading list located in the AVIA5022 Moodle course site. All readings are available online to support a distance-learning format.

The readings are either "mandatory/required" or "optional/recommended", and are labelled

accordingly in the reading list.

Historical but highly relevant additional material is also available in the reading list. These resources are included for students who may wish to use additional texts to further their personal interest in this subject area.

Course Evaluation and Development

UNSW Aviation highly value student feedback as a way to constantly improve course offerings, teaching excellence and the student experience. In AVIA5022, students are provided with opportunities, both informal feedback, via direct correspondence with the course convenor, forums, and survey questions in the Reflect and Review activities; and formal feedback, via myExperience Surveys. The availability of this feedback creates a culture of continuous improvement by identifying, responding to, and acting on student feedback.

The course survey will open towards the end of Term. Students are encouraged to participate in the survey via Moodle, myUNSW, or through the direct myExperience link.

Please provide constructive feedback and focus on your learning experience in relation to the course material. While the survey is confidential, it is not anonymous. Comments that breach the Student Code of Conduct, that are hurtful, racist, sexist or ill-natured, may lead to disciplinary action.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Joe Hattley				via email and/or Moodle forums	No	Yes

Other Useful Information

Academic Information

Upon your enrolment at UNSW, you share responsibility with us for maintaining a safe, harmonious and tolerant University environment.

You are required to:

- Comply with the University's conditions of enrolment.

- Act responsibly, ethically, safely and with integrity.
- Observe standards of equity and respect in dealing with every member of the UNSW community.
- Engage in lawful behaviour.
- Use and care for University resources in a responsible and appropriate manner.
- Maintain the University's reputation and good standing.

For more information, visit the [UNSW Student Code of Conduct Website](#).

Academic Honesty and Plagiarism

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.

Further information about referencing styles can be located at <https://student.unsw.edu.au/referencing>

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage. At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity, plagiarism and the use of AI in assessments can be located at:

- The [Current Students site](#),
- The [ELISE training site](#), and
- The [Use of AI for assessments](#) site.

The Student Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: <https://student.unsw.edu.au/conduct>

Submission of Assessment Tasks

Penalty for Late Submissions

UNSW has a standard late submission penalty of:

- 5% per day,
- for all assessments where a penalty applies,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and

- no permitted variation.

Any variations to the above will be explicitly stated in the Course Outline for a given course or assessment task.

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

Special Consideration

If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration, usually within 3 days of the sitting date/due date. You can apply by logging onto myUNSW and following the link in the My Student Profile Tab. Medical documentation or other documentation explaining your absence must be submitted with your application. Once your application has been assessed, you will be contacted via your student email address to be advised of the official outcome and any actions that need to be taken from there. For more information about special consideration, please visit: <https://student.unsw.edu.au/special-consideration>

Important note: UNSW has a “fit to sit/submit” rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

Faculty-specific Information

Additional support for students

- [The Current Students Gateway](#)
- [Student Support](#)
- [Academic Skills and Support](#)
- [Student Wellbeing, Health and Safety](#)
- [Equitable Learning Services](#)
- [UNSW IT Service Centre](#)
- Science EDI Student [Initiatives](#), [Offerings](#) and [Guidelines](#)

School Contact Information

Email:

aviation@unsw.edu.au

Telephone:

Undergraduate Courses - +61 2 9385 5756 (Katie Wang)

Postgraduate Courses - +61 2 9385 5787 (Michelle Lee)